

Question: In view of the tests which are thus available, in your opinion, are the replacement cost rates of 4.9 or 5.6 per cent measures of the rate of return reasonably applicable to a rate base representing original cost of property?

Answer: No. The replacement cost rate represents the cost of obtaining currently dollars of capital which have a purchasing power much less per dollar than the purchasing power which existed when the original cost in dollars were invested.

Application of the replacement cost of capital rate to the original cost rate base, where the price level has risen significantly and the cost of capital rate has at the same time declined, does not conform to any consistent basis of return determination. It would provide a return less than would be provided by either the basis upon which the investment was originally committed to the enterprise or the return available now to investors from other investments [612] in enterprises of corresponding risks and uncertainties.

It would expose investors in regulated enterprises to the hazard of whichever is the lesser, not only with respect to the different kinds of evidence of the rate base, but also to the greater hazard of whichever is lesser with respect to rate base and rate of return in combination with each other.

Question: You distinguished two bases upon which the rate making process may seek to induce the investment of capital in regulated enterprise. One was defined as the competitive replacement basis. The other was the investment cost basis.

You said that application of methods of return determination which correspond to these two regulatory concepts provide test of the reasonableness of the return otherwise arrived at. You have now applied a method consistent with the competitive replacement basis of regulation.

Have you given consideration to original cost of capital or historical cost of capital as criteria of the reasonable and adequate return.

Answer: Yes. I have given careful consideration to these criteria but have not attempted to give them quantitative expression. It has been unnecessary to do so in view of the results of the test by reference to competitive cost.

Penn Water was established and developed during the [613] period from 1905 to 1912 and later. Compared with the present, that was a period of relative scarcity of capital, relatively higher interest rates, and relatively higher costs of equity capital. The capital costs initially incurred included those necessary to attract capital to a competitively new type of enterprise.

The undertaking was exposed to the hazards of a business engaged in the utilization of a water power resource and to the hazards of construction in a river whose behavior characteristics were in part unknown and in part unpredictable.

The cost of capital included the cost of waiting for the prospective return during a significant period required to achieve full utilization of the capacity.

In view of the effect of these factors upon the cost rates at which the initial portion of the invested capital was obtained, it has appeared unnecessary to attempt a precise statement of those rates.

[614] MR. SPARKS: If your Honor please, I believe the next question is admissible, and a proper question. I would like to put that to the witness.

TRIAL EXAMINER: Please do so.

By MR. SPARKS:

Q. What is your conclusion as to the return which is reasonable and adequate for Pennsylvania Water & Power Company?

**THE WITNESS:** Does my undertaking to answer that question imply that I could have done so without reference to the facts that have been excluded? If that is so, I cannot answer it.

**TRIAL EXAMINER:** You may answer the question simply as put, on any basis that you now have, and the effect of that basis will come out on further examination.

**THE WITNESS:** Very well, sir.

A. It is my opinion that the test by reference to competitive costs provides the most significant evidence of the fair return. For this reason, I conclude that the fair return is not less than \$2,450,000. Expressed in relation to an original cost rate base of \$37,680,000 the conclusion is that the fair rate of return is not less than 6.5 per cent.

Q. If the conclusion were expressed in relation to an original cost rate base of about \$33,500,000, what would be the fair return and what would be the effect on the rate of return of not less than 6.5 per cent? [615] A. There would be no significant effect on my conclusion as to a fair return of not less than \$2,450,000, but the 6.5 per cent would be increased approximately in proportion to the decrease in the original cost rate base. The effect of such an assumption as to original cost would be limited to the results of the tests provided by Paragraph II (b) and Paragraphs III and IV of Schedule 11.

MR. GOLDBERG: Now, Mr. Examiner, the witness is answering now with respect to portions of the schedule which have been excluded.

MR. SPARKS: May he finish the answer, if your Honor please?

TRIAL EXAMINER: Yes.

**THE WITNESS:** I used the results of the tests provided by Paragraph IV as a matter of convenience only to state the extreme lower limit of the range of reasonableness.

**TRIAL EXAMINER:** With respect to the answer that you gave immediately after the proffer of evidence, do you wish to add any qualification, or have you just added that qualification?

**MR. SPARKS:** Would you like to have the question reread to you, Doctor?

**THE WITNESS:** I would like to inquire as to what the Examiner means by "qualification"?

**TRIAL EXAMINER:** In response to your inquiry the [616] Examiner stated that you could answer the question put to you by counsel, and anything that was necessary to clarify that answer, or to qualify it, as the case may be, could be elicited at another time. The Examiner does not want the witness to understand that he is not permitted to qualify his answer now if he wishes to do so.

**THE WITNESS:** I have no reason to qualify the answer if it is considered that the answer I made is in the light of the general study which I undertook and carried to a conclusion.

[617] Q. I understand that this conclusion as to the fair return is before whatever may be the appropriate credit to consumers for the earning capacity of depreciation funds in view of the risks present in their utilization by the company?

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[618] A. That is correct.

[630] **TRIAL EXAMINER:** \* \* \* In connection with the existing offer of proof the Examiner denies the offer beginning with line 19 of page 602 of the record transcript, and ending with line 6, page 612 thereof.

With respect to that part of the offer which lies beyond that point in the transcript the Examiner will strike the remaining portion of the offer of proof and

direct counsel to put the witness on the stand and address questions to him for specific ruling, on a question and answer basis.

Now then with respect to the statement of Trial Examiner made at page 604, line 16, to simplify the record the Examiner changes from "yes" to "no" with this understanding that there [631] is no objection to a witness stating what is consolidated original cost, what is working capital, or what is total original cost, now the effect of the ruling now being made is to make it consistent with the first ruling in connection with the offer of proof, page 602 to page 612.

MR. GOLDBERG: Mr. Examiner, with respect to transcript 604, it appears from the record that I stated there was no objection to the questions that had begun on page 602 down to my statement on 604. I did make the statement at the time, but I made it because I had missed the objectionable portions of the questions and answers that had preceded my statement. I now want the record to show that I object to those questions and answers that relate to the objectionable portions of Schedule 11.

[634] MR. SPARKS: Do I understand that all of the questions and answers which appear in the transcript beginning on [635] page 602, line 19 and ending on Page 612, line 6, have been excluded as evidence?

TRIAL EXAMINER: Insofar as all of the offer is directed to the purpose of qualifying the parts of Schedule 11 which will be excluded.

MR. SPARKS: If Your Honor please, that seems to me to leave us in the air where we have no definite ruling on which portions actually are excluded.

TRIAL EXAMINER: The Examiner has been definite and will be and states that the testimony offered at that place in the record just designated by counsel is

excluded and states as his reason for excluding it that it is directed to the qualification of the objectionable portions of Schedule 11.

MR. SPARKS: Very well, sir.

MR. GOLDBERG: And I think the Examiner has made it clear that if any portion of the exhibit would not be objectionable, since it is offered in bulk, the Examiner has no recourse but to exclude all of it.

[636] TRIAL EXAMINER: With that idea in mind, I stated that the evidence on consolidated original plant, working capital and total original cost as it appears in the witness' testimony if separated therefrom and put in as separate testimony, would be received.

[638] DIRECT EXAMINATION (Resumed).

By MR. SPARKS:

[639] Q. Doctor, you distinguished in your testimony, two bases upon which the rate making process may seek to induce the investment of capital in regulated enterprise. One was defined as the competitive replacement basis. The other was the investment cost basis. You said that application of methods of return determination which correspond to those two regulatory concepts provide tests of the reasonableness of the return otherwise arrived at. You have now applied a method consistent with the competitive replacement basis of regulation. Have you given consideration to original cost of capital or historical cost of capital as criteria of the reasonable and adequate return?

MR. GOLDBERG: Before the witness answers that question, I would like to have counsel for the Respondent state what he means by "you have now applied a method consistent with the competitive replacement basis of regulation". Does he by that statement refer

to any portions of Schedule 11 to which counsel for the Staff has objected?

MR. SPARKS: I will be glad to ask the witness that question.

MR. GOLDBERG: It is not the witness' statement; it is your statement.

MR. SPARKS: I am asking the witness if that is correct.

[640] TRIAL EXAMINER: Just a minute. He may ask the witness that question.

By MR. SPARKS:

Q. Is it correct, Doctor, that you have applied a method consistent with the competitive replacement basis of regulation?

MR. GOLDBERG: That is not my inquiry. My inquiry is, did you by that statement—and the witness is going to answer for you, Mr. Sparks—refer and intend to refer to those portions of Schedule 11 of Exhibit 30 to which Staff counsel has objected?

THE WITNESS: The answer is that the results of the competitive method here referred to are expressed in Schedule 11.

MR. GOLDBERG: Where in Schedule 11?

THE WITNESS: Throughout Schedule 11.

MR. GOLDBERG: Is it expressed in Roman numeral No. I?

THE WITNESS: Roman numeral No. I is an amount shown on Schedule 11 for the purpose of making possible the tests by reference to the competitive cost method.

[641] MR. GOLDBERG: So that if I understood your statement, it is not shown in I? That is merely basic data?

THE WITNESS: It is an essential part of the method employed in Schedule 11.

MR. GOLDBERG: But the methods you employed in Schedule 11 are not reflected in I, isn't that so?

THE WITNESS: That is so.

MR. GOLDBERG: And the methods you employed are reflected however, in Roman II-A through IV-B of Schedule 11, is that right?

THE WITNESS: No more than reflected in I as isolated separate amounts.

MR. GOLDBERG: Do you show any rate of return in I?

THE WITNESS: No rate of return is recorded under that part of that paragraph, no.

MR. GOLDBERG: And it is the rate of return and dollars of return that reflect the results of your application of the method in Schedule 11, isn't that so?

THE WITNESS: In the following paragraphs of Schedule 11, amounts of return are recorded which reflect the testing. In each of those paragraphs, rates of return are stated which represent the amount of return in relation to the figures shown in I.

MR. GOLDBERG: So then, Mr. Examiner, it is now obvious that by the statement Mr. Sparks made in introducing the question, "You have now applied a method consistent with [642] the competitive replacement basis of regulation," he had reference to the results of Roman II-A through IV-B of Schedule 11 and therefore, I object to the question.

TRIAL EXAMINER: When you say that you have applied a method, Mr. Witness, is that method reflected in Schedule 10?

THE WITNESS: Schedule 10 represents a study which is an essential part of the method to which I have referred.

**TRIAL EXAMINER:** Does this testimony that counsel now proposes to have the witness give relate to Schedule 10?

**MR. SPARKS:** It relates generally to all of Dr. Foster's bases, if Your Honor please. The real question is, "Have you given consideration to original cost of capital or historical cost of capital as criteria of reasonable and adequate return?"

**MR. GOLDBERG:** Then why don't you merely ask that question without introductions?

**MR. SPARKS:** I will let my question stand as I have put it.

**MR. GOLDBERG:** If you leave it in the way that you have stated it, then I object to it.

**TRIAL EXAMINER:** Will counsel address the bench and not one another?

**MR. GOLDBERG:** I intended to address the bench, Mr. Examiner, and state that the question as stated with that introduction clearly relates to the objectionable portions of Schedule 11, and therefore I object to it. There is a [643] purpose for that introduction.

**TRIAL EXAMINER:** Just a minute. Where have you given consideration to original cost of capital or historical cost of capital as criteria of a reasonable and adequate return?

**THE WITNESS:** Do you mean by the question "where", in which schedule or exhibit?

**TRIAL EXAMINER:** Yes.

**THE WITNESS:** The answer is at no point in a schedule or exhibit.

**TRIAL EXAMINER:** In connection with your testimony, where have you?

**THE WITNESS:** I have done so in consideration of the general principles that there was rate-of-return determina-

tion, in consideration of the bases of return determination, and in reaching the final conclusion as to the return required for this company, I gave consideration to the original and historical cost of capital to this company.

**TRIAL EXAMINER:** I will sustain the objection to counsel's question, and he may put to the witness the question, "Have you given consideration to original cost of capital or historical cost of capital as criteria of the reasonable and adequate return?"

**MR. SPARKS:** Do I understand, if Your Honor please, that Your Honor has ruled that my question is not admissible?

**TRIAL EXAMINER:** That is correct.

[644] **MR. SPARKS:** Now I offer the answer which the witness would have given if he had been permitted to answer, if your Honor please. I offer this as one of the factors which the witness has taken into consideration in arriving at his conclusion as to the fair rate of return, and the fair return to the Respondent, if he had been permitted to answer, he would have stated as follows:

"Answer: Yes. I have given careful consideration to these criteria but have not attempted to give them quantitative expression. It has been unnecessary to do in view of the results of the test by reference to competitive cost.

"Penn Water was established and developed during the period from 1905 to 1912 and later. Compared with the present, that was a period of relative scarcity of capital, relatively higher interest rates, and relatively higher costs of equity capital. The capital costs initially incurred included those necessary to attract capital to a competitively new type of enterprise. The undertaking was exposed to the hazards of a business

engaged in the utilization of a water power resource and to the hazards of construction in a river whose behavior characteristics were in part unknown and in part unpredictable. The cost of capital included the cost of waiting for the prospective return during a significant [645] period required to achieve full utilization of the capacity. In view of the effect of these factors upon the cost rates at which the initial portion of the invested capital was obtained, it has appeared unnecessary to attempt a precise statement of those rates."

[649] Q. What is your conclusion as to the return which is reasonable and adequate for Pennsylvania Water & Power Company? A. It is my opinion that the test by reference to competitive costs provides the most significant evidence of the fair return. For this reason, I conclude that the fair return is not less than \$2,450,000. Expressed in relation to an original cost rate base of \$37,680,000 the conclusion is that the fair rate of return is not less than 6.5 per cent.

[650] Q. If the conclusion were expressed in relation to an original cost rate base of about \$33,500,000, what would be the fair return and what would be the effect of the rate of return of not less than 6.5 per cent? A. There would be no significant effect on my conclusion as to a fair return of not less than \$2,450,000, but the 6.5 per cent would be increased approximately in proportion to the decrease in the original cost rate base. The effect of such an assumption as to original cost would be limited to the results of the tests provided by Paragraph II (b) and Paragraphs III and IV of Schedule 11. I—

Q. Please continue your answer. A. I used the results of the tests provided by Paragraph IV as a matter of convenience, only to state the extreme lower limit of the range of reasonableness.

MR. GOLDBERG: I now move to strike out that portion of the last answer beginning with the words, "the effect of such an assumption as to original cost would be limited to the results of the tests provided by—".

TRIAL EXAMINER: The motion to strike is sustained.

MR. SPARKS: To which I except.

[651] By MR. SPARKS:

Q. I understand that this conclusion as to the fair return is before whatever may be the appropriate credit to consumers for the earning capacity of depreciation funds in view of the risks present in their utilization by the company? A. That is correct.

CROSS-EXAMINATION.

By MR. GOLDBERG:

[656] Q. Did I understand your testimony to be with respect to the subject of rate of return, Dr. Foster, that if the investment base is employed in fixing the fair return or fair rate of return, then, the experienced cost of money, rather than the current cost of money should be employed in determining the fair rate of return?

A. I did say that in my opinion the experienced or past cost of capital rate is consistently and constantly applied in relation to the investment cost rate base. It is [657] consistently applied because it is consistent with the logical basis of regulation. I said also that in my opinion a competitive cost rate is consistently applied in relation to a rate basis reflecting the cost of constructing a substitute plant capable of supplying the same service.

I did say, however, that either method followed rigidly as a matter of formulae might, under conceivable circumstances, give unreasonable results.

Q. Well, then, if I understand it, to put it in my terms; if they are acceptable to you; you stated that if the invest-

ment rate base is used in order to be consistent in determining the fair return or fair rate of return, the experienced or past rate cost of capital should be employed in relation to your rate base; is that right? A. I said that employment is consistent. I avoided making necessarily a virtue of that consistency.

Q. You are saying that that is what should be done?  
A. No.

Q. That is, that the rate consistently should apply to the investment rate base, experienced or past cost of capital; is that right? A. If I understand your question, if you are talking now about the end result the answer is "no."

Q. I am talking about establishing a fair return or fair rate of return, which I understand to be the subject of [658] your testimony. That was the subject of your testimony, was it not? A. It was.

Q. And relating it to the subject of your testimony, I thought I understood you to state that it would be inconsistent—state, in effect that it would be inconsistent in fixing the fair return or fair rate of return to employ the investment rate base and relate it to current cost of money. Was I correct in my understanding? A. As a matter of method of regulation, consistency, I believe, requires the relation of one kind of past cost to the other, as you just stated.

It does not follow, however, that the result of that method is either reasonable or adequate or consistent with other tests of the appropriate, reasonable rate of return.

Q. In other words, you are saying that relating like things—assuming that they are like—does not necessarily mean that the resulting return will be a fair return. Is that right? A. Yes, recalling my expression of a moment ago, there is not necessarily merit in consistency.

[659] Q. I am interested in finding out under what circumstances and in what instances you would be of the

opinion that the consistent application would not result in a fair return.

Am I to understand from your testimony that the application of past cost of money to the investment rate base would be inappropriate where there has been, since the investment of the dollars in that investment rate base, an increase in the price levels? A. I am or might refer to that circumstance, to answer your question, by making reference now to an extreme [660] situation. Assume, for instance, that at the time of the investment of \$10,000,000, then the cost of capital rate is 7 per cent. Assume that during the subsequent 20 years there has been inflation of serious magnitude and proportions so that at the time of the rate proceeding 20 years hence the cost of constructing the plant capable of supplying the same service is \$50,000,000, and not \$10,000,000; and that there has been no significant change in the rate reflecting the cost per dollar of capital investment.

In that hypothetical situation I would conclude that the consistent application of the rate of 7 per cent to the original dollars of investment would provide an annual return neither adequate nor reasonable.

Q. You say there would have to be a significant change in price level; is that right? A. The question of whether or not the given change is significant depends upon other considerations and circumstances which may be present.

Q. What are the other considerations and circumstances? A. There are many such. For instance, the closeness with which the capitalization reflects original investment is one.

Q. Any others? A. They do not occur to me at the moment. There are others.

Q. That is the only one that occurs to you. I want [661] you to take your time and think about it.

— (After a short pause.)

A. That is the only one that occurs to me at the moment.

Q. What in your opinion is a significant change in price levels that should be given consideration? A. You desire now that I express that in quantitative terms?

Q. However you feel that you ought to express it. A. I would have to ask you what you mean by "price level" in that case.

Q. How do you use the phrase? A. I use the phrase as a general one, referring to any and all kinds of prices.

Q. In other words, you do not relate it solely to prices which are involved in constructing a utility plant; is that right? A. As a general term it is not so related.

Q. In your testimony do you relate it solely to the construction of a utility plant? A. No. In my testimony I have referred to the changes in cost of constructing a utility plant, also to changes in the general level of wholesale commodity prices.

[662] Q. Well, let us first think in terms of relating it to utility plant, which is our immediate concern in this case. What would be a significant change in price levels, in your opinion? A. I would not undertake, Mr. Goldberg, to answer that question in the abstract and unrelated to a specific problem or set of circumstances.

Q. Well, you have unquestionably, I assume, considered that in relation to this case, haven't you? A. I have.

Q. And you must have, in that connection, come to at least a general conclusion as to what you would consider a significant change in price levels, as related to the construction of utility plants, isn't that so? A. I did come to the conclusion that the changes which have taken place in the cost of constructing utility plant since the date when the property of this company was in fact constructed have been significant. I also was of the opinion that the changes which have taken place in the general level of wholesale commodity prices since the dates of the construction of the facilities of this company have, in fact, been significant.

Q. So that if I understand your last answer, you did not come to any general conclusion as to significant changes,

but merely a specific conclusion in this case, is that right? [663] A. That is all that I either could have done or had any occasion to do.

Q. On your Exhibit 30, Schedule 10, the Schedule is entitled, "Over-all Replacement Cost of Capital as at December 31, 1945." Did you mean to state by presenting that schedule that 9.25 per cent as shown in Roman No. I, the section for equity capital, is the replacement cost of equity capital? A. I mean to say that for the purposes for which used here, I concluded that 9.25 per cent is the rate which represents the replacement cost of equity capital.

Q. Well, did you mean that the company would retire its outstanding equity capital and issue new equity capital? Is that what you had in mind? A. I intended, Mr. Goldberg, to make it clear that any estimate of the replacement cost of capital, whether that capital is represented by debt, preferred stock or common stock, must be hypothetical and must be imputed.

Q. Well, we know that debt capital is replaced, do we not? That is common practice and goes on every day, isn't that so? A. Debt capital arrangement or contract is a limited term contract.

Q. At least we know that debt capital is replaced day in and day out? You have seen it happen in the newspapers [664] and have seen the announcements, isn't that so? A. Outstanding debt is refinanced; yes, if that is what you mean.

Q. And that is what you mean by replacement, is it not? A. No.

Q. You don't mean refinancing? A. No.

Q. What do you mean by replacement cost of capital when you show 2.78 for the debt capital on Schedule 10? A. I refer on Schedule 10 and in the definition of replacement cost of capital to the cost rate at which a utility—here the Pennsylvania Water & Power Company—might under current market conditions obtain the supplies of debt

capital, assuming a hypothetical capitalization and freedom from the heritage of past contractual arrangements for capital.

Q. Do you mean 2.78 per cent on schedule 10 to represent the cost of a refunding issue, or of a new issue in addition to the presently-existing issue of bonds? A. It may be neither, Mr. Goldberg.

Q. I want to know what it means in Schedule 10. I am a little puzzled. I thought I understood it. I thought I understood the 2.78 per cent to represent the cost of refunding the presently-outstanding debt capital of the [665] respondent company? A. The cost of refunding the presently outstanding debt capital necessarily includes the cost of calling that debt. No such costs are included here or could be on the basis of the definition of replacement cost of capital. As I stated, replacement cost represents that cost which would be incurred if the entire capital requirements of the utility were obtained under current market conditions in the proportions indicated by this exhibit and without consideration of any costs carried over from past arrangements with investors.

Q. Are you saying that the 2.78 per cent shown on Schedule 10 as debt capital is the cost of refunding under the present market the outstanding bonds of Penn Water with the exception that it does not include certain additional costs, such as you say the cost of calling. That, you say, should be included? A. It does not, as a matter of definition, include any costs carried over from prior issues such as the redemption premiums.

Q. But exclusive of that, you say it is the cost of refunding the presently-outstanding bonds, is that right? A. It is, of course, imputed or an estimate so that it may or may not correspond to the cost which would actually be experienced if today Penn Water were to issue refunding bonds in the amount indicated.

[666] Q. But it is the — A. (interposing) Let me add one thing.

Q. Go ahead. A. I was careful in describing the cost rate to say that for the purposes for which used, it does not and should not reflect the rates temporarily available in a current market, and I indicated that it was based primarily upon the late 1945 experience, rather than the dip in interest rates which occurred during the first month of 1946.

Q. In other words, reflecting those, the 2.78 per cent might be even lower? A. If without regard to purpose it had been adjusted directly to the most favorable and perhaps accidental experience, it undoubtedly would have been lower.

Q. But this 2.78 is your estimate of the cost of replacing the presently outstanding bonds of Penn Water exclusive of such other costs which you state should be included but have not been included in the 2.78, isn't that so? A. Subject to the qualifications which I expressed a moment ago, that is correct.

Q. Haven't I stated all the qualifications in my question? Would you like to have the question read? A. If you expect a further answer, yes.

Q. I would like to have an answer that does not require me to relate it back to some earlier answer of yours.

[667] TRIAL EXAMINER: Read the question.

(The question was read.)

TRIAL EXAMINER: Can you answer the question without having to refer to the qualifications? Is the question itself complete?

THE WITNESS: No, the question is not complete.

TRIAL EXAMINER: Very well.

THE WITNESS: Because the 2.78 is not, in a strict sense, an estimate of the replacement cost rate which would be experienced by Penn Water today. It is subject to the qualifications which I expressed as to the lack of significance of spot prices for the purposes for which the estimate was made.

By Mr. GOLDBERG:

Q. And by "spot prices," you have reference to the particular occurrences of favorable refinancing in the early part of 1946? A. I had in my testimony particular reference to the experience of the Madison Gas and Electric Company in February, 1946.

Q. Getting back to this 9.25 per cent from which I was temporarily diverted, we were discussing the fact in that connection that debt capital is replaced. That is also the fact, is it not, with respect to preferred capital? That, we find, is frequently replaced by companies, isn't that so? A. Preferred stock capital or preferred stock capital [668] contracts, like debt contracts, are refinanced, yes.

Q. To secure the advantages of lower interest rate and the lower cost of money, is that not right? A. That is right, and possibly other advantages.

Q. But I have difficulty in understanding the concept of the replacement cost of capital in connection with common stock. Is it your statement that companies make a practice of retiring their outstanding common stock and replacing it with other common stock? A. I made no such statement.

Q. Well, what do you mean by "replacement cost of capital" when you refer to the 9.25 per cent? Isn't that the cost, as you see it, of retiring the outstanding common stock of Penn Water and replacing it with another issue of common stock? A. No, I have excluded from the definition of the replacement cost of debt and preferred stock capital, the costs which would be incurred in retiring the outstanding debt and preferred stock.

Q. With that qualification, is that what you intended the 9.25 per cent to represent? A. With that qualification, the definition of the replacement cost of equity capital is consistent with and in fact, is the same definition as the terms "replacement cost of debt capital" and "replacement cost of preferred stock [669] capital."

Q. Then you have assumed in Schedule 10 in reflecting the 9.25 and the 10.25 per cent as the replacement cost of

equity capital, that Penn Water will retire its outstanding common and issue a new common, is that right? A. No, I did not say that. Perhaps I may attempt a direct statement having direct definition of the replacement cost of equity capital. Replacement cost of equity means the estimated cost rate which would be incurred if the enterprise as a going concern were to obtain currently the required amounts of equity capital in given proportion in a capitalization. I said, "as a going concern" because, for the purpose of the use here, I made that assumption.

Q. That brings me to one point that I would like to clear up. Schedule 10 reflects the replacement cost of capital of a going concern—right? A. That is right.

Q. Not a hypothetical new company just starting out in business? A. That is right..

Q. Have you assumed that this going concern would not have any equity capital outstanding before it went out into the current market? A. What do you mean by "outstanding"? The corporation necessarily has shares of stock.

[670] Q. If it is a going concern, it necessarily must have had an outstanding capital structure, is that right? A. That is right.

Q. Did this going concern shown on Schedule 10 have any equity capital? A. It is a hypothetical situation, of course.

Q. I don't know that that answers the question, Dr. Foster. I am sure you intended to answer it. A. Any corporation existing as a going concern has a capitalization. It is, I think, appropriate, however, to attempt an estimate of the capital cost rates which would be incurred if such corporation were to obtain the capital in the current market, and to exclude from that estimate the amount of cost which exists because of past contractual arrangements.

Q. Would this going concern shown on Schedule 10, Roman Numeral I, have debt, preferred and equity capital

at the time it looked to the current market? A. The purpose of—

Q. (Interposing) Please, Dr. Foster, will you try to answer the question?

TRIAL EXAMINER: Read the question.

(The question is read.)

TRIAL EXAMINER: Answer the question.

THE WITNESS: For the purpose of an estimate of the [671] replacement cost of capital, I have assumed the corporation to have outstanding debt, preferred stock and equity capital in the proportions corresponding to those which represent Penn Water's actual present capitalization.

By MR. GOLDBERG:

Q. It is almost actual rather than hypothetical? A. It is actual in that sense, yes.

Q. And you have assumed, in Schedule 10, further that the outstanding equity capital will be replaced, haven't you? A. I don't think, Mr. Goldberg, that it is a question of replacement. I think that it is a question of an estimate of the cost rate at which a hypothetical corporation having given characteristics would be able to obtain equity capital in the current market.

Q. And that necessarily involved an assumption of going out into the current market and replacing outstanding capital, replacing the outstanding capital structure, is not that so? A. Well, if you were attempting an estimate of the cost rate at which a specific corporation could replace its existing capital, that would be true. That is not what I have done here.

Q. You have assumed a company without any capitalization of debt, preferred and equity—right? A. That is right.

Q. And you have assumed, subject to the qualifications [672] you have already stated in the record, that the debt

capital could be replaced at 2.78, is that right? A. Well—

Q. (Interposing) I said "subject to the qualifications you have already stated."

MR. SPARKS: I do not think that is a complete question, if Your Honor please. I object to it.

TRIAL EXAMINER: Just a minute. Can you answer that question in that form?

THE WITNESS: I have not, Mr. Examiner, assumed replacement. The inquiry is directly as to the cost rates at which a hypothetical corporation would be able to obtain capital of these kinds in the current market.

By MR. GOLDBERG:

Q. For its presently outstanding capital, right? A. I don't know what that question means, Mr. Goldberg.

Q. You have got Penn Water in this case, haven't you? That is the company with which we are concerned—the principal company—right? A. Yes, sir.

Q. It has debt capital, preferred capital and equity capital, is that right? A. Yes, sir.

Q. And it has certain costs of money associated with that debt capital and preferred capital—right? [673] A. It has certain experienced costs of money, yes.

Q. And you have intended to reflect on Schedule 10, have you not, how that experienced cost of money is affected by current costs of money, subject to the qualifications you have already stated, isn't that so? A. If I understand your question, no; because a statement of how that experienced cost of money would be affected by refunding under current market conditions would be very different from the results that I have here.

Q. Because you would include these other costs involved in that refunding, such as call, that you consider applicable to a cost of refunding, is that right? A. Certainly, because the cost of that new capital would include these other costs.

Q. You told us that Schedule 10 reflects a going concern—right? A. I said the estimates are based upon the assumption of the existence of a going concern.

Q. And necessarily, having assumed a going concern, you have assumed that that going concern has a capital structure with related experienced cost of money to that capital structure—right? A. No, I do not assume that it has a capital structure. In Paragraph II of Schedule 10 I chose a different capital structure.

[674] Q. That just involves a different assumption? A. Right, but a capital structure implies given proportions, and for the purpose here I may assume any proportions which are appropriate.

Q. Having assumed a going concern in connection with Schedule 10, did you assume any proportions of the capitalization of that going concern? A. I assumed the proportions which I stated in Column 2 of Schedule 10, both for the first and the second parts of that schedule.

Q. In other words, with respect to the first part of Schedule 10, you assumed that the going concern had debt capital, preferred stock capital and equity capital—right? A. No, Mr. Goldberg; I assumed that the corporation as a going concern was to obtain in the current market, capital in these proportions from different classes of investors.

Q. Is the capitalization you reflected in Schedule 10 the first capitalization of that going concern? A. It is unnecessary, Mr. Goldberg, for my purpose, to make any such assumption.

Q. Now, Dr. Foster—

TRIAL EXAMINER (interposing): Read the question. And will you answer it, Mr. Witness, as directly as you can?

(The question was read.)

THE WITNESS: The only answer that I can give, Mr. Examiner, [675] is that I do not know.

By MR. GOLDBERG:

Q. Can you have a going concern without an existing capitalization? A. No.

Q. Now, you assumed a going concern, did you not? A. For this purpose, yes.

[676] Q. And the going concern is Pennsylvania Water & Power Company—right? A. The going concern is a corporation having the characteristics of the Pennsylvania Water & Power Company other than the proportions of debt, preferred stock and equity capital in its capitalization.

Q. You intended Schedule 10 to have some significance in relation to your conclusions on fair rate of return, didn't you? A. I did and do.

TRIAL EXAMINER: Let me ask the witness a question. In your Column 2 you are assuming no fixed amount of capital that is to be obtained? It can be \$35,000,000, \$2,000,000, or any amount so long as the proportions are as stated there.

THE WITNESS: Yes, with this one qualification, that if the amount were reduced to extremely small quantities, it would of course affect the cost rates.

TRIAL EXAMINER: Can you state simply without going into too much detail just how you obtained the figure 2.78?

THE WITNESS: The figure 2.78 is my estimate of the cost rate at which a corporation similar to Penn Water with respect to all characteristics affecting the cost of capital could obtain in the current market amounts of capital corresponding to the amounts required for investment to supply service by Penn Water, assuming the capitalization corresponding [677] to Penn Water's capitalization.

TRIAL EXAMINER: How does the 2.78 result from your Schedule 8. What did you do?

THE WITNESS: I examined the yield and costs rates indicated by Schedule 8 to have been experienced by other

companies in recent financing, both new and refunding. Those cost rates exclude, in the case of those other instances, all costs related to refunded issues. I examined those cost rates in relation to various factors, particularly the capital structures expressed as the proportion of gross income available to pay the interest on those bonds, and as a matter of judgment I reached the conclusion that the replacement cost rate appropriate for Penn Water is 2.78 per cent.

**TRIAL EXAMINER:** Is 2.78 per cent a simple arithmetic average of the cost rate column of Schedule 8—that is Column 9?

**THE WITNESS:** No, Mr. Examiner, it is not an average rate, it is not an average of any kind. Those cost rates vary with the quality of the bonds represented by them. The final column of Schedule 8 headed, "Moody's Rating" is some measure of that quality.

**TRIAL EXAMINER:** Actually what did you do to derive 2.78?

**THE WITNESS:** I did several things, and in what I say I am neglecting the distinction between yield rate and cost of [678] financing. I examined the cost rates in Column 9 in relation to the indication of quality shown by the ratings in Column 12; that is, I separated them out as between AA and the A rates. There is other evidence to the general effect of the quality of Penn bonds as being intermediate between the qualities typically represented by the ratings A and AA but closer to the AA.

**TRIAL EXAMINER:** Did you classify all the A bonds in Schedule 8 and then all of the AA?

**THE WITNESS:** I did that and separately averaged them.

**TRIAL EXAMINER:** You separately averaged them?

**THE WITNESS:** Yes.

**TRIAL EXAMINER:** What was it? Was it a weighted or an arithmetic average?

**THE WITNESS:** An arithmetic average. I think there are 11 of each rate.

**TRIAL EXAMINER:** What did you do with those arithmetic averages?

**THE WITNESS:** I laid them aside for a time—in fact I am stating the reverse of what I actually did. In fact what I previously did was this,—I had charted the yield rates for all of the bonds represented on Schedule 8 in relation to times interest requirements provided as indicated by the pro forma income statement contained in the prospectus. There is of course generally a relationship between the coverage of [679] interest requirements and the yield rate. As I said in the direct testimony, the coverages provided in all these instances are so broad that that general relationship is obscured.

**TRIAL EXAMINER:** I do not want to get into this in too much detail, but I just want to see what your studies were. You made this chart of times-interest coverage.

**THE WITNESS:** It provides a curve.

**TRIAL EXAMINER:** Yes.

**THE WITNESS:** So that one gets away from the invalidity of an averaging process.

**TRIAL EXAMINER:** What did you do next?

**THE WITNESS:** As a matter of judgment then, I estimated the yield rate which would be experienced on the basis of the coverage which would be provided in the Penn Water situation.

**TRIAL EXAMINER:** Under what conditions?

**THE WITNESS:** Assuming refinancing or assuming the issuance of those bonds at the rates indicated and on the basis of the assumption as to capital structure which is expressed in both Parts I and II of Schedule 10.

TRIAL EXAMINER: What times-interest factor did you use for Penn Water?

THE WITNESS: I have forgotten, Mr. Examiner. It is a large coverage.

TRIAL EXAMINER: Where did you get that figure?

[680] THE WITNESS: That represents the coverage which would be provided on the basis of the experienced gross income of Penn Water.

TRIAL EXAMINER: Then what did you do with your two averages that you obtained from Schedule 8? Merely check them?

THE WITNESS: I had one average, that being the average yield rate experienced in the issuance of the AA and A bonds during the past year. I had a further or different analysis which was that of a relationship which does not provide an average. On the basis of those two analyses of Schedule 8, I as a matter of judgment concluded that 2.72 is the replacement cost rate before the cost of financing margin which is appropriate for the purpose here. I then analyzed the behavior of the cost of financing margin which is represented by the differences between Columns 8 and 9, and again as a matter of judgment used .06 as a loading of the 2.72.

TRIAL EXAMINER: Your 2.72 comes from two separate determinations of yield that you obtained in three different processes—one from your chart, one from your averages, and one through this other process?

THE WITNESS: Yes. It is available as the result of several, or at least two approaches to the analysis of the data shown by Schedule 8.

TRIAL EXAMINER: Why do you limit Schedule 10 to [681] replacement cost? Would it not also be valid to state the replacement or additional cost—that is addition to capital?

**THE WITNESS:** It is perhaps only a matter of definition, Mr. Examiner. Schedule 10 represents the cost rate which would be experienced in obtaining debt and for other kinds of capital in approximately the amounts indicated and irrespective of the purpose, whether new capital or refunding.

**TRIAL EXAMINER:** The word "replacement" can come out of your title without in any way affecting the validity of the data, is that true?

**THE WITNESS:** The word "replacement" is in the title in order to afford a distinction in definition between different kinds of capital cost; that is, replacement cost, experienced cost, historical cost, and original cost.

**TRIAL EXAMINER:** Replacement cost then, according to your definition, can cover just simply additions to the capital?

**THE WITNESS:** The replacement cost is an estimate of the cost which would be incurred under the given circumstances for the purpose of obtaining additional capital to be used for construction purposes.

By Mr. GOLDBERG:

Q. In connection with your last answer, do you mean that the 2.78 on Schedule 10 represents the cost of debt [682] capital in addition to outstanding debt capital which is not being refunded? A. Not necessarily, Mr. Goldberg, because it does not necessarily follow that the cost which would be experienced in obtaining relatively small increments of new debt capital is the same cost as would be experienced currently to replace the entire amount of debt capital.

Q. You mean the cost of securing additional debt capital may vary—it may differ—from the cost of refinancing existing debt capital, is that right? A. It may vary from the cost which would be experienced in obtaining currently the total amount required.

Q. Is this 2.78 replacement refunding cost subject to the qualifications you made earlier in your testimony?

A. It certainly, Mr. Goldberg, is not the cost which would be experienced in refunding. It is the cost as estimated which would be experienced currently by a company having these risks in obtaining the amounts of debt capital in approximately these quantities indicated.

Q. Obtaining it for the first time, or obtaining it for the purposes of refunding existing debt capital? A. Either, Mr. Goldberg, subject to the qualifications with respect to the carry-over costs related to past contracts.

Q. Are you saying that your company on Schedule 10 [683] went into the market to secure 52 per cent of additional debt capital?

A: I am sorry, but I do not understand the question.

By MR. GOLDBERG:

Q. Did the going concern which you have assumed in Schedule 10 have any debt capital? A. No, I have assumed that this going concern went into the market to obtain debt capital in amounts constituting 52 per cent of the total proceeds from the issuance of securities.

Q. In other words, it had no debt capital before it went into the market, is that right? A. One may make any assumption that may be desired with respect to the capitalization before the financing of which we are speaking. I have made no assumption.

Q. When did this going concern that you assumed, go into business? A. I have not been concerned with when it went into business nor with the costs which it may unavoidably have experienced in reaching the status of a going concern and being able to go into the market on the bases indicated by Schedule 10. If I had been concerned with those costs, I would [684] necessarily have recognized costs of capital substantially in excess of those that are reflected in Schedule 10.

[695] Q. Now, Dr. Foster, it is my recollection that at the conclusion of your direct testimony you stated that the 6.5 per cent rate of return, which you testified is, in your opinion, a fair and reasonable rate of return in this case, should be adjusted to the extent of the credit and the assets represented by the depreciation reserve balance. Is that right?

MR. SPARKS: Just to correct the record, Dr. Foster

[696] testified to a rate of return of not less than 6.5.

MR. GOLDBERG: All right.

By MR. GOLDBERG:

Q. Dr. Foster, is my recollection correct about that?

A. Yes, sir.

Q. Would the adjustment be a downward adjustment of 6.5 per cent? A. I testified that the conclusion as to fair return and as to rate of return is subject to whatever may be the appropriate treatment of depreciation for the purpose of return determination. As to whether or not rate of return would be adjusted downward, I think depends upon the form of that treatment.

Q. As I have your testimony, the question was:

“Question: I understand that this conclusion as to the fair return is before whatever may be the appropriate credit to consumers for the earning capacity of depreciation funds in view of the risks present in their utilization by the company?

“Answer: That is correct.”

Now will the fair return be adjusted downward as the result of that appropriate credit? A. Your previous question concerned the rate of return; your present question concerns the fair return?

Q. That is right. [697] A. The answer need not necessarily be the same to both questions.

Q. A fair return is the result of the application of rate of return to the rate base; isn’t that so? A. Assuming the procedure by using the rate base and rate of return, yes.

[698] Q. Did you assume a rate base? A. I assumed that the procedure would be by determination of a rate base.

Q. And that was basically your testimony in this case, is that right? A. It was basically the form of the testimony, yes.

Q. So that if there is an adjustment of the fair return downward as the result of the appropriate credit, then in turn there will be an adjustment downward of the fair rate of return, isn't that so? A. That does not necessarily follow.

Q. Well, then, getting back to the form in which you answered the question, what would be the effect on the fair return of the appropriate credit to consumers for the earning capacity of the depreciation funds generated by the charges to depreciation? A. The trend of the adjustment would be a downward adjustment.

Q. And assuming no change in the rate base, what would be the effect of the downward adjustment as a result of this credit to fair rate of return? A. The effect on what?

Q. On the fair rate of return? What is the effect on the fair rate of return of an adjustment downward of fair return resulting from the credit, assuming no change in the [699] rate base? A. There may be no effect on the rate of return. It depends upon the form of the treatment of depreciation for the purposes of the fair return determination.

Q. What did you have in mind when you were talking about appropriate credit to consumers? A. I had in mind any treatment of depreciation which is appropriate and reasonable for the purpose of recognizing depreciation for a fair return determination.

Q. Did you have any specific mode of procedure in mind? A. No, I had in mind any of the alternative modes of procedure which are available to regulatory commissions.

Q. Did you have in mind an undepreciated rate base when you made that statement? A. The use of an undepreciated rate base is among the modes of procedure which are available.

Q. Did you have in mind an appropriate credit to consumers in connection with an undepreciated rate base? A. An appropriate credit to consumers in connection with ~~an~~ undepreciated rate base is among the modes of procedure.

Q. That is not the question. Did you have in mind an undepreciated rate base in connection with an appropriate credit to consumers? [700] A. I have answered to the effect that I had in mind an undepreciated rate base as among the modes of treatment which are available.

Q. And did you also have in mind other modes of treatment of the undepreciated reserves? A. I answered that I had in mind the several modes of procedures.

Q. Name them; which ones did you have in mind? A. The use of the depreciated rate base is among those modes of procedure.

Q. Go ahead. A. The use of an undepreciated rate base with the rates of that credit varying from the minimum rate to a maximum rate.

Q. Did you have in mind the use of a credit to consumers in connection with the depreciated rate base? A. Yes.

Q. Do I understand that when you stated that your fair return is subject to the appropriate credit, you did not have in mind what the credit would be or the direction of the adjustment? A. I have indicated that a credit necessarily implies a direction of adjustment. To answer the first part of your question, I made no study of the appropriate credit.

Q. But you did not extend your thinking of the effects [701] of an adjustment for appropriate credits to the consumers for the earning capacity of the depreciation funds to its effect on the fair rate of return, is that right? A.

I have testified as to the direction of the effect on the return allowance, if that answers your question.

Q. No, it does not.

TRIAL EXAMINER: Read the question.

Q. (The question is repeated.)

THE WITNESS: In that case I do not understand your question.

By MR. GOLDBERG:

Q. You told us that the effect of the credit on fair return would be downward—right? An adjustment downward? A. I have said that the recognition of the depreciation, whether by credit or otherwise, results in an adjustment of the fair return allowance downward from what it would be in the absence of such recognition.

Q. Yes. Now, you understand what rate of return is as distinguished from return, don't you? A. I believe so.

Q. I thought so.

MR. SPARKS: I object to that.

TRIAL EXAMINER: Just a moment. Objection sustained.

MR. GOLDBERG: To what? I have no question pending.

TRIAL EXAMINER: It is not necessary to make that kind [702] of a statement.

MR. GOLDBERG: I was just agreeing with the witness that I thought he understood it from his direct testimony. I think I am entitled to agree with the witness.

By MR. GOLDBERG:

Q. Now, Mr. Foster, since you understand the difference between rate of return and return, have you thought through what the effect on the rate of return would be of the appropriate credit to consumers for the earning capacity of depreciation funds? A. I have, I believe, testified

that there is not necessarily any effect on the rate of return depending upon the form or mode of treatment of depreciation in connection with fair return determination.

Q. You don't know what effect it would have on the rate of return in this case, isn't that so? A. I have attempted to answer your question, Mr. Goldberg.

TRIAL EXAMINER: Answer the question, Mr. Witness. Read the question.

(The question was read.)

MR. SPARKS: What do you mean by "it", Mr. Goldberg?

MR. GOLDBERG: We are talking about the effect of the appropriate credit that he mentioned, on the rate of return.

TRIAL EXAMINER: Let us not have any exchanges between [703] counsel. If you have an objection to the question, state it.

MR. SPARKS: I object to it. I think that Mr. Goldberg should make his question clear.

MR. GOLDBERG: Let us have the question read again.

TRIAL EXAMINER: Read the question.

(The question was repeated.)

MR. GOLDBERG: By "it", I will explain, Mr. Examiner, that I meant the appropriate credit to the consumer for the earning capacity of the depreciation funds as just testified to by the witness.

TRIAL EXAMINER: Answer the question.

THE WITNESS: The answer to the question is that I do. That effect on the rate of return depends upon the mode of treatment of depreciation.

By MR. GOLDBERG:

Q. Assuming an undepreciated rate base what did you conclude? A. Assuming an undepreciated rate base, there is a fair return of not less than 6.5 per cent which remains unchanged.

Q. Assuming a depreciated rate base, what did you conclude? A. The fair rate of return at 6.5 per cent also remains unchanged.

Q. So the fair rate of return remains unchanged in your opinion, whether the appropriate credit is associated [704] with an undepreciated or depreciated rate base, is that right? A. The use of an undepreciated rate base provides indirectly the credit which is provided directly by the adjustment of the fair return where the mode of treatment is the use of an undepreciated rate base.

MR. GOLDBERG: I submit to the Examiner that the witness is able to answer the questions directly and I would like such an answer.

TRIAL EXAMINER: The Examiner will strike the answer. Read the question.

(Question read.)

THE WITNESS: The fair rate of return remains unchanged, yes.

By MR. GOLDBERG:

Q. Doctor, referring you to the second page of Schedule 6 in Exhibit 29, will you tell us how you arrived at the 9.25 per cent there shown as the applicable cost rate to equity capital? A. The applicable cost rate of 9.25 per cent was arrived at as the result of the study of the several kinds of evidence of the cost of equity capital as the result of various studies to which I testified at some length.

Q. What are these several kinds of evidence that you mentioned? A. The first to which I referred includes the [705] evidence with respect to capitalization rates and the evidence with respect to cost of equity financing.

Q. What evidence did you consider in connection with the cost of equity financing? A. I considered the available evidence with respect to the rates at which investors had capitalized the prospective income from their investments in Pennsylvania Water and Power Company.

Q. Are these rates shown in the exhibits anywhere that you have presented—that is, the rates at which the investors have capitalized prospective income? A. No.

Q. Does it appear anywhere in the work papers? A. No.

Q. Where does it appear? A. The rates at which investors capitalized the present income, whether income available from Pennsylvania Water and Power Company or any other company are necessarily subjective.

Q. You mean they may vary with the individual who is applying the judgment? A. They vary with the individual who is applying the judgment.

Q. Do I understand from that, that you have not intended here to reflect the informed investors' rate [706] of capitalization? A. I have intended here to use the best available evidence of the investors' capitalization rates.

Q. I am trying to find out where that evidence is. I may like to examine it. A. Oh, I misunderstood you. That evidence is presented in Chart 1 of Exhibit 29 as evidence rather than as capitalization rates themselves. It is presented also in Schedule 1 and Schedule 3 as well as in the testimony generally.

[707] Q. You mean by "the rates at which investors have capitalized prospective income" the earnings price ratios? A. I tried to make it appear that I do not, Mr. Goldberg.

Q. I did not hear that answer. A. I do not. Q

Q. I notice Schedule 1 which you indicate represents part of the evidence of the rate at which investors have capitalized prospective income contains monthly earnings price ratios, and that is why I thought that your use of the phrase "the rate at which investors have capitalized pro-

spective income" was synonymous with earnings price ratios. Am I wrong about that? A. The title of Schedule 1 is merely "Monthly Earnings Price Ratios."

Q. Yes, and that was one of the evidences as I understood it that you used in arriving at the rate at which investors capitalized prospective income, is that right? A. I also characterized it as evidence and was careful to distinguish evidence from the fact of the capitalization rate.

Q. I am following your language. I am saying that Schedule 1 was evidence to you of the rate at which investors have capitalized prospective income—is that right? A. That is right.

[708] Q. And as far as Schedule 1 is concerned, that evidence of the rate is synonymous with earnings price ratios, is that right? A. No.

Q. Schedule 3 shows earnings price ratios for a selected group of companies, doesn't it? A. For a group of six companies, yes.

Q. A selected group? A. I said on direct testimony that it was not a group which resulted from a process of selection.

Q. Didn't you testify that you had available for use at least one other company that you did not use? I think it was the Southern California Edison? A. Well, available in the sense that it could have been utilized and included with additional effort, yes.

[709] Q. So at least to that extent selection had to be made, you had to determine that certain companies would be eliminated for various reasons? Right? A. I eliminated one company for the reason which I stated.

Q. Were there any other companies outside those in Schedule 3, that you considered and rejected? A. I know of no other companies.

Q. By that you mean that the only companies which you went to and examined the data were those listed at the bottom of Schedule 3, and Southern California Edison

Company? A. The only companies for which I examined the data over the period shown by Schedule 3 are those listed at the bottom of that schedule.

Q. How is it you happened to select the first companies you went to? Were you familiar with them? A. Well, I am generally familiar with the corporate organization of these companies from time to time, yes.

Q. So you had occasion when requested to make a study to automatically know what companies fit the respondent company; is that right; without having to consider a great group of companies? A. I do not know what you mean by "fit the respondent company."

Q. Comparable. [710] A. I have not testified that I considered these companies comparable.

Q. Do you? A. The earnings price ratios shown by Chart 1, I believe, demonstrate that they are not closely comparable.

Q. Is your subjective rate of capitalization and prospective income in any way influenced by these data that are shown on Schedule 3? A. The capitalization rate is the rate at which investors trading in the market capitalized what they believed to be the prospective income. The answer is that those rates could not have been influenced by these data shown on Schedule 3. They might have been influenced, of course, by similar information available to those who made the investment decision.

Q. I have not, apparently, made my question clear. I will restate it. A. Thank you.

Q. I want to know whether the subjective rate at which investors capitalized the prospective income arrived at by you in this case was influenced by the earnings price ratios reflected in Schedule 3 of Exhibit 29? A. Referring specifically to the rate of 8.5 per cent, the answer is that, yes, I considered the earnings price ratios shown by Schedules 1 and 3 in arriving at that [711] conclusion.

Q. And the 8.5 per cent rate is the one you considered applicable to the respondent company, Pennsylvania Water & Power Company, right? A. Yes.

Q. Dr. Foster, it was determined, you say, at least in part on evidence of earnings price ratios of companies that are not comparable to Pennsylvania Water & Power Company; is that not so, Doctor? A. I testified on direct that I used earnings price ratios shown by Schedule 3 merely for the purpose of background and to permit a more intelligent interpretation of the meaning and significance of the Penn Water earnings price ratios.

Q. When you say you used it merely for the purpose of background and for a more intelligent appraisal of the appropriate rate for Pennsylvania Water & Power Company, could you, perhaps, be more explicit about how Schedule 3 serves as a background to your conclusion? A. Perhaps I can do so by reference to the chart upon which these data shown by Schedule 3 are plotted.

Q. Yes? A. As soon as I saw that information, that the evidence of the rates at which Penn Water investors capitalized the prospective income, it has a more direct and useful application for the purpose. I desire to know whether or not the [712] variations in the earnings price ratios of the Penn Water common stock, as evidenced by the capitalization rate followed a course which was generally similar to the variations of fluctuations in the earnings price ratios of other electric and electric combination companies. The determination of those earnings price ratios and their analysis in relation to the Penn Water earnings price ratios tended to answer that question.

Secondly, since Penn Water is not a distributing company, and has characteristics which are different from those of electric companies which are both producing and distributing companies, I was interested to know whether typically, over a term of years, the earnings price ratios of Penn Water would be found at a higher or lower level than those of these other electric companies.

Thirdly, with reference to the meaning and significance of the earnings price ratios as evidence of the capitalization rates, I was interested to know whether or not the fluctuation of the earnings price ratios in relation to events

and circumstances which may be assumed to influence investor appraisals was generally the same for other earnings price ratios as it was found to be for the Penn Water earnings price ratios.

Q. So that you plotted on Chart 1 the earnings price ratios, for instance, for Penn Water, and for the group of companies, and compared the fluctuations and the evidences [713] you assumed brought them about. Is that right? A. I made those comparisons, and, also, I noted the comparative levels, from time to time.

Q. Did you conclude that the fluctuations on Penn Water's earnings price ratios followed the same trend as the fluctuation of the earnings price ratios of the group of companies? A. To some extent, yes.

Q. You mean by that that at some period they did and at others they did not? A. The earnings price ratios of Penn Water common stock, like the earnings price ratios of any other one company, are subject to influences which are unique and peculiar to that situation.

Q. All these companies that you selected for study and comparison with Penn Water, how many of them have contracts which virtually guarantee a return on their equity capital? A. None to my knowledge.

Q. Do you know whether Penn Water has a contract which virtually guarantees a return on its equity capital?

\* \* \*

[714] By Mr. GOLDBERG:

Q. What is the answer? A. I have no knowledge that it has such a contract.

Q. Did you study the contracts that Penn Water has? A. I did.

Q. Did you study the contract that Penn Water has with Consolidated of Baltimore? A. I did.

Q. Is it your view that that contract does not virtually guarantee a return on Penn Water's equity capital? A. It is my view that, as a matter of fact, that contract gives to Penn Water an assurance of return which it otherwise would not have.

Q. Will you agree that that contractual arrangement with Consolidated constitutes virtually a guarantee of earnings on Penn Water's capital stock? A. The answer I think obviously depends upon the meaning of the expression "virtually guarantees."

Q. I will say that I am using it in its ordinary dictionary sense. A. The contract provides for Penn Water an assurance of stability of return substantially more than would otherwise be available.

Q. But you will not agree with me, will you, that the [715] contract constitutes virtually a guarantee of earnings to Penn Water's capital stock? A. I will not agree that any arrangement which can be made affords a guarantee or even virtually a guarantee of return to business operation.

Q. Did you examine the annual reports of Penn Water to its stockholders? A. I did.

Q. Did you, after an examination of those reports, reach the conclusion that if such a representation was made to the stockholders, it was erroneous? A. Mr. Goldberg, as to whether or not it was erroneous, it depends on the intent and meaning of the words used. I did not attempt to pass judgment upon the correctness of the representation or statement in the annual report.

[716] Q. I would like to show you the 1931 annual report of Pennsylvania Water and Power Company to its stockholders, and more particularly to the last paragraph on page 14 of that report, and ask you if you ever read that paragraph? A. I have done so.

Q. Does it not state there that:

"The new contractual arrangement with the Consolidated Company covers a period of 48 years and constitutes virtually a guarantee of earnings for the company's capital stock, since all the payments which the Consolidated Company is obligated to make to your company are an operating expense of that company

and thus come ahead of dividends, ahead of the return on its preferred and common stock."

You can read anything else you like. A. It appears as you have read it, apparently.

Q. Am I to understand that you do not agree with that statement? A. I have had no occasion to agree or disagree with that statement.

Q. So that is something you had to consider in reaching the conclusion as to the fair rate of return on this company, is that not true? A. Would you mind asking that question again?

Q. I will put it this way: Is that not something you had to consider in reaching a conclusion as to the fair rate [717] of return for the Pennsylvania Water and Power Company, Dr. Foster? A. I did not have to consider whether or not, as a fact, any given degree of guarantee is provided by the contract.

Q. Would that not affect the rate at which investors would capitalize the prospective income of Penn Water? A. Undoubtedly, it had influence on the rate at which investors capitalized the prospective income from Penn Water.

Q. But although that is the case, and you are concerned with that, you did not consider whether or not the contract constitutes virtually a guarantee of earnings of Penn Water's equity? A. On the contrary, I have given full consideration to the degree to which that contract and the company's statement with regard to it influenced the investors' appraisal of the return from Penn Water.

Q. Would you not have to reach your own conclusion as to whether the statement which I have shown to you and which I have read into the record was a correct statement? A. No, I am not providing the capital funds for Penn Water. I am concerned only with the investors' appraisal of the funds, and I have not attempted to substitute my judgment as to the meaning of the facts for those expressed by investors in their market transactions.

[718] Q. Did you not have to decide whether an informed investor would view the contract as Penn Water viewed it? A. I did not find it necessary to ascertain the significance which the informed investor attached to the contract because the informed investor expressed that significance in what he bid for the stock.

Q. As reflected by the earnings price ratios? A. As reflected by the market price of the stock considered in relation to the prospective income.

Q. Did you ignore the factors you set out at the top of Chart I in reaching that conclusion? A. I am sorry, but I do not understand your question.

Q. You have in Chart I at the upper half a rather wide column with a series of one-line comments, right? A. Yes.

Q. You put them in there because you thought they had some effect on the earnings price ratio; is that so? A. I put them in there because they are statements of events and circumstances which may have had some effect or which it is rational to believe did have some effect on the earnings price ratios.

Q. But you do not think that the guarantee, the virtual guarantee of a return on equity capital until 1980 was a significant fact; is that right? A. I have not so testified. I have testified that I [719] assumed that it was considered by investors and appraised by them.

Q. Why did you not put that in the column on Chart I? A. If you will look, Mr. Goldberg, at the space adjacent to the month of June, I believe, 1931, you will find the words, "Revised Contract with Consolidated".

Q. Now, what does that mean? Why didn't you say there instead of what you have there, "Revised Contract with Consolidated Guaranteeing until 1980 the Earnings" —(laughter).

It may be funny to others but to me it is a serious matter. We are concerned here with a chart which purports to reflect the significant facts of the life and history of this company up until the present time. I want to know from

this witness what does this revised contract with Consolidated mean, and what it meant to the informed investors? A. The informed investors, to them it was something which meant the contract together with its terms.

Q. Did you, when you said revised contract with Consolidated, mean, and is it your statement which you intend to make here to this Commission, that the revised contract with Consolidated was virtually a guarantee of earnings for the Penn Water common stock? A. The words which I read, together with others appearing in that chart No. 1 are concise or typical statements which I intend to represent whatever may be the facts in that [720] connection.

Q. What was the fact before you when you read that contract, and reached the conclusion that it was virtually a guarantee— A. (Interposing) If I may interrupt, I have already answered that question by saying that I reached that conclusion that that contract afforded a high insurance or assurance of return irrespective of fluctuations which otherwise would have been experienced.

Q. But that statement where your only conclusion was, upon examination of that contract, that this is a revised— wherever that statement appears—the statement, "Revised Contract with Consolidated," that alone is of no significance; would you say that it taken alone constitutes virtually a guarantee to Penn Water's equity capital stockholders of a return on their stock; isn't that so? A. The words appearing in the margin there, as you see them on the chart, are to be taken to mean the fact of the revision of the contract and the fact of whatever the terms of the revised contract may have been.

[721] Q. Are we to take it to mean that you intended to say that the investor considered that that contract constituted virtually a guarantee of earnings on Penn Water's common? A. May I have that question repeated?

(The question was repeated.)

THE WITNESS: No.

[732]

## THOMAS R. TATE,

was called as a witness by and on behalf of the Respondent, being first duly sworn, was examined and testified as follows:

## DIRECT EXAMINATION.

By MR. SPARKS:

Q. Mr. Tate, please state your full name, place of residence and occupation. A. Thomas R. Tate. I reside at 2126 Yorktown Road, Northwest, Washington, D. C. I am a professional engineer and the Washington representative of the firm of Chas. T. Main, Inc., architects-engineers of Boston, Massachusetts.

Q. What education have you had? A. Three years of high school, one year at William Jewell College, Liberty, Missouri, and I completed the four-year engineering course of the School of Engineering, University of Missouri, in three years and one summer graduating in 1912 with the degree of Bachelor of Science in Electrical Engineering. Since that time, I had a lecture course in public utility economics in the extension division of the University of Wisconsin at Milwaukee, Wisconsin, and have completed several of the Army's extension courses.

[733] Q. Are you a registered professional engineer? A. Yes, sir; in the State of New York.

Q. Are you a member of any engineering societies and organizations? A. Yes, sir, I am. I am a fellow in the American Institute of Electrical Engineers, a member of the American Society of Mechanical Engineers, a member of the American Society of Civil Engineers, a member of the Washington Society of Engineers and a military engineer member of the Society of American Military Engineers and a member of other scientific clubs and organizations.

Q. Mr. Tate, will you please summarize your engineering and construction experience? A. I have had several years of experience after high school and during and

between college and engineering school in the operation, design, and construction of operating electric utilities. I have had 34 years of experience since graduation of which four years were with operating electric utilities, 20 years with consulting and construction engineering organizations, and 10 years of government work including eight and one-half years with the Federal Power Commission, and one and one-half years with the Public Utilities Commission of the District of Columbia.

Q. Starting with your first connection with public utilities, will you please state in chronological order your [734] experience and the nature of your duties? A. To begin with, I should like to mention that whereas most engineers have to attain their basic knowledge of public utilities by beginning at the bottom upon graduation and working up to a position where they can exercise their engineering training, I had this experience before graduation.

In the summer of 1905, I started with the Union Electric Light and Power Company of St. Louis, Missouri, now known as the Union Electric Company of St. Louis, Missouri, as a meter repairman and then after a short period of meter reading, was sent out as a helper testing meters and later was transferred to the Electrical Testing Laboratory where I calibrated various instruments and made acceptance and efficiency tests on electrical machinery. At this time, I attended the company's school and had a practical course in electricity and magnetism and had a more intensive course in algebra and trigonometry.

My work in this department involved the testing and calibrating of electrical measuring instruments at the main generating station of the company known as Ashley Street and various substations, testing feeders for voltage tests at load centers and setting relays and regulators.

My experience in the generating station and substation was so interesting to me that I transferred over to the Operation Department and became a substation operator at Station A. [735] Then after one year at college and one

year at the University of Missouri, I worked for the Union Electric Company during vacation and during the years 1909 and 1910 as ground man, lineman, line slip man, estimator and inspector, laying out new wood pole transmission lines and distribution systems.

Q. What has been your experience since graduation in 1912? A. The day after graduation, I started to work for, as it was then called, the Milwaukee Electric Light and Railway Company of Milwaukee, first as foreman of construction of lines to rural communities and lake resorts, then an engineering clerk, writing up orders for construction, then as engineer of wire for the Wire Department, then assistant electrical engineer, and finally at the time I left the employ of the company, I was its distribution engineer.

In these several capacities, I laid out and supervised the constructing of steel tower and wood pole transmission lines, customers substations and supervised the re-design of a greater part of Milwaukee's distribution system. I also handled the street and interurban railways and company's telephone and dispatching system.

During this period, I supervised the design of a 7'0" diameter tunnel under the Milwaukee River for steam mains and electric cables, and laid out underground and overhead systems. I also participated in the making of electrolysis surveys and [736] in the operation of the company's gas plant at Racine, Wisconsin.

I examined for purchase hydroelectric plants and distribution system at Fox River and Burlington, Wisconsin, and made system power studies.

Q. Did you have any valuation experience while with the Milwaukee Company? A. Yes, sir, while I was there we started a valuation of all of the company's property and I had charge of the valuation of all of the electric property.

Q. When did you leave the Milwaukee Company and what was your next connection and the nature of your

duties? A. I left the Milwaukee Company in August, 1914, to become electrical engineer and assistant to the manager of The Janesville Electric Company of Janesville, Wisconsin.

As I was the only professional engineer in the employ of the company besides the manager, my duties included the supervision of operation of four hydroelectric plants and two steam power plants; the supervision of all construction, the handling of complaints and line and plant troubles, and required the design of a new head gate structure for the main hydroelectric plant; the supervision of rebuilding of one hydroelectric plant destroyed by fire; the handling of rate matters, voltage tests, power surveys, system maintenance and other operating and financial matters. During this time, [737] I also designed and constructed a new white way street lighting system for the City of Janesville.

Q. When did you leave the Janesville Electric Company and what was your next connection and duties? A. I left Janesville in the summer of 1916 to accept a position with Harold Almert, Consulting Engineer in Chicago, who was engaged on a valuation of the Commonwealth Edison Company, at that time a 50 million dollar property. My duties involved the making of inventories of the substation properties and the underground conduit and cable system.

Q. What was your next position and your duties? A. In January, 1917, I became assistant electrical engineer on the design and construction of a blast furnace and steel mill plant for the Mark Manufacturing Company, now owned by the Youngstown Sheet and Tube Company at Indiana Harbor, Indiana.

In this position, I assisted the electrical engineer on the design, in keeping records of orders placed, shipments and materials and equipment required and on hand, and in the writing of specifications and in the inspection of the construction work.

Q. When did you leave the Mark Manufacturing Company and what was your next position and duties? A. In

August, 1917, I accepted a position with Perin and Marshall, consulting engineers and contractors of New [738] York City as electrical engineer in charge of design of the electrical work for the firm. This organization was engaged in designing and constructing blast furnaces and steel mills in India, China, Great Britain, Canada, and the United States, also, in the design and construction of vegetable oil mills, chemical plants, cement plants, and in mining and metallurgical operations associated with blast furnaces and steel mills.

I was with this organization for six years and in addition to my supervision of design, I also had charge of all the inspection, expediting, ocean shipping, specifying (sic) writing and purchasing and general office routine.

The work involved steam power stations, transmission lines, substations, by product coke oven plants and similar work to that done by public utilities.

In this capacity, I personally purchased about \$28,000,000 worth of material and equipment and handled the purchase of over \$60,000,000 within this country, in Canada, and, after World War I, in various European countries.

During this period, I also visited all of the principal steel mills in St. Louis, Chicago, Cleveland, Pittsburgh, Bethlehem and others in the East and some of those in the South. I also had charge of the design of penstocks and anchorages for two 15,000 kilowatt capacity hydroelectric units operating at 1748 feet net effective head for the Andhra Valley Power Supply Company of Bombay, India, and [739] made numerous hydroelectric power estimates and studies.

Q. Please describe your duties in your next connection. A. In July, 1923, I became associated with the firm of McClellan and Junkersfield, Inc., of New York City, first as assistant electrical engineer and then on report and valuation work.

In this capacity, I participated in the design of Cahokia Station at St. Louis and the Avon Station at Cleveland, of high voltage transmission lines and step-up and step-down substations, and in the preparation of estimates and had charge of the following undertakings:

Valuation of the Wichita, Newton and Hutchinson, Kansas, natural gas properties of the Electric Bond and Share Company;

A report on a steam electric power station and a district steam heating station for the City of Toronto, Canada;

A report on transportation for the Public Utilities Commission of the District of Columbia;

And a transportation survey for the City of Milwaukee, Wisconsin.

I also assisted and had charge of a portion of the investigation of all the Cities Service Company's utility properties in the United States and I had charge of the investigation in the States of Colorado and Wyoming, and of all the North American Light and Power Company properties in St. Louis, Missouri, and southern Illinois, and prepared numerous reports [740] and financial statements while with this organization.

Q. Mr. Tate, will you please describe your next connection and duties? A. In 1928, I became chief engineer and assistant to the president of the ~~Trojan~~ Engineering Corporation of New York City.

In this capacity, I supervised the design and construction of hydroelectric stations, steam power plant additions, Diesel Engine plants, transmission lines and substations, gas works, natural gas pipe lines, gas distribution systems, ice plants, irrigation plants and general utility structures. I made rate investigations and valuations for rate cases and for purchase and supervised the numerous investigations and the preparation of reports involving water power studies and additions and betterments to existing systems as well as new processes.

Q. When did you leave the Trojan Engineering Corporation and what was your next connection? A. At the end of 1931, I left the Trojan Company and in January, 1932, I became chief valuation engineer for the Public Utilities Commission of the District of Columbia.

In this capacity, I had entire charge of the valuation of the Washington Gas and Light Company, the Georgetown Gas-Light Company, and the Chesapeake and Potomac Telephone Company, and assisted on the valuation of the Capital Traction [741] Company and the Washington Railway and Electric Company and participated in valuation and rate cases.

In the Chesapeake and Potomac Telephone case, I prepared a trended cost of reproduction which was accepted by the Public Utilities Commission and the company. It was based upon trends developed by me largely from the Telephone Company's experience, records and costs.

Q. When did you become an employee of the Federal Government? A. In September, 1933, I accepted a position with the Public Works Administration as Engineer Examiner. My work involved the examination and preparation of reports covering the engineering soundness of applications for loans by municipalities and private interests for water supply and treatment, sewers, gas systems, hydroelectric and irrigation projects, Diesel Engine plants, and gas and electric distribution systems.

Q. How long were you with the Public Works Administration and what was your next position and your duties? A. I left the Public Works Administration on December 28, 1933, to accept a position with the Federal Power Commission as Director of its National Power Survey. My duties were as follows:

Director of National Power Survey, in charge of a survey of the water resources of the United States as they relate to [742] the conservation, development, control and utilization of water power; and of the relation of water power to other industries and to interstate and foreign

commerce; and of the transmission of electrical energy in the United States and its distribution to consumers, and the development of a program of public works.

From March 26, 1936, to July 1, 1941, I was Chief of Division of Gas and Electric Resources, formerly Division of Power Resources and Requirements, in charge of engineering studies and investigations of the power resources of the entire country, including studies of existing and potential markets, economic trends; growth of population and power demands; studies to encourage and promote co-ordination of power resources and requirements; investigations of the ownership, operation, and control of electric facilities; investigations of the cost of generation, transmission, and distribution of electric energy; and investigations relating to the transportation and sale of natural gas in interstate commerce, and investigations for other purposes; and such other duties as the Commission assigned.

From July 1, 1941, to June 13, 1942, active duty ending April 30, 1942, I was chief of the Bureau of Electrical Engineering and Director of the Commission's National Defense Power Staff. My duties were, under the administrative direction of the Commission and/or the Chairman, I supervised and directed; the collection and analysis of [743] reports covering the operation of utility systems; studies of existing power loads and probable power loads resulting from war orders; determination of capacity available to carry loads, and the areas in which additional capacity is needed and the amount and kind thereof; collaboration with the War Production Board and the Executive Office of the President in locating new industries; cooperation with the United States Corps of Engineers, the Bureau of Reclamation and the Tennessee Valley Authority in planning of power projects to meet the requirements of war industries; collaboration with the War Production Board in determining priorities for power facilities and the rationing of power in areas having deficiencies;

technical studies, in cooperation with the Commission's Bureau of Water Power, relating to power markets for dams to be constructed by the government for multi-purpose river basin developments; investigations and planning for interconnection and coordination of power supply facilities, including new and emergency transmission lines where needed; investigations of applications for approval of consolidations, mergers, security issues, acquisition or disposal of property of utility companies and of interlocking directorates; investigations to determine the jurisdiction of the Commission over electric utility systems; and to carrying out of the Commission's special defense power functions as defined in the Federal Power Act and in the President's letter to the Commission of June 14, 1940.

[744] Q. Will you state when you left the Federal Power Commission and describe your next connection and duties?  
A. I resigned from the Federal Power Commission effective April 30, 1942, and joined the staff of Chas. T. Main, Inc., architects-engineers of Boston, as its Washington representative, which position I now hold.

My work involved valuation and rate cases, investigations and reports for various agencies of the Federal Government, municipalities, and private interests and has covered the fields of hydroelectric power, steam electric power stations, Diesel Engine plants, transmission systems, munitions plants, natural gas pipe lines and distribution systems, and during the World War II, the handling of matters with the War and Navy Departments, the War Production Board and other war agencies.

MR. SPARKS: Mr. Examiner, I have a document entitled, "Cost of Constructing and Reproducing the Entire Physical Properties of the Pennsylvania Water & Power Company, and Susquehanna Transmission Company of Maryland, as of December 31, 1945." I ask that this be marked for identification as Exhibit No. 31.

**TRIAL EXAMINER:** The document may be marked Exhibit 31 for Identification.

(The document referred to was marked Exhibit No. 31 for Identification.)

[745] **By MR. SPARKS:**

**Q.** Mr. Tate, I hand you a document entitled—

**MR. GOLDBERG** (interposing): Just a minute. I would like to have a copy of it.

**MR. SPARKS:** Here is one. I am glad to give you a copy of it.

**MR. GOLDBERG:** Thank you.

**By MR. SPARKS:**

**Q.** Mr. Tate, do you have a copy of the document to which I have just referred, and which has been marked for identification as Exhibit No. 31? **A.** Yes, sir.

**Q.** The document entitled in part, "Cost of Constructing and Reproducing the Entire Physical Properties of the Pennsylvania Water & Power Company and the Susquehanna Transmission Company of Maryland as of December 31st"? **A.** Yes, I do.

**Q.** Can you identify it? **A.** Yes, I can.

**Q.** Mr. Tate, did you prepare this exhibit? **A.** It was prepared under my direction.

**Q.** What is the purport of this exhibit? **A.** This exhibit shows the cost of constructing and reproducing the entire physical properties of the Pennsylvania Water & Power Company, and its subsidiary company in Maryland, [746] the Susquehanna Transmission Company of Maryland.

**Q.** What is the basis of this exhibit? **A.** The exhibit represents the results of a study and an investigation of the cost of constructing the entire physical properties of the two companies as of December 31, 1945, by the use of modern construction methods.

Q. How much time was spent in this study and investigation? A. The work was started on or about January 12, 1946, by myself, and beginning on or about January 26 I had the assistance of several engineers from our home office in Boston most of whom had spent a month to six weeks going over the property, and I also had the assistance of several of the company's engineers and accountants and clerks, more or less, continuously up to the present time.

Q. Did you examine the properties that you are determining the cost of reproducing? A. I personally examined the Holtwood Hydroelectric Plant, the Holtwood Steam Plant, the Coal Preparation Plant, the River Coal Plant with the exception of floating equipment, all the major substations, buildings and structures of the companies, several of the patrolman's buildings, some of the buildings in the Village at Holtwood, and all of the company's transmission lines at various points.

Q. How much time was spent in your examination of [747] these properties? A. Three consecutive days, plus parts of other days.

Q. Had you at any time previously, visited the Holtwood Hydro Plant? A. When I was with the Federal Power Commission I visited Conowingo, Safe Harbor, and Holtwood in 1935 and I believe I also saw the Holtwood Hydro Plant in 1936 at the time of the World Power Conference in Washington, but do not recall going inside the plant at that time.

Q. How complete was your recent inspection? A. I examined the hydro plant, steam plant, coal preparation plant, river coal plant and some of the major substations thoroughly, except for the spillway of the dam at Holtwood, which was under water and could not be seen.

Q. Did you also examine the Safe Harbor Plant? A. Yes, sir.

Q. Mr. Tate, what was the purpose of your examination of the property of the company? A. The purpose

of my examination of the properties was to see the major items of equipment; the type of structures, the kinds of material used in the construction, and to familiarize myself with the methods used in the construction, and the character of the soil and rock encountered in the excavation.

The principal purpose of this examination was to compare [748] the Safe Harbor plant with Holtwood as we have used the actual cost of constructing Safe Harbor as a base for the determination of the cost of reproducing Holtwood.

[749] Q. In what way have you applied the Safe Harbor costs?

[750] MR. SPARKS: Would you like to have the question read?

THE WITNESS: No, sir; I have it. We have applied the Safe Harbor costs in three major phases of our work.

(A) In the use of a composite labor force such as would be required to reconstruct the Holtwood project.

[751] (B) In the use of Safe Harbor costs of excavation and concrete work.

(C) In the application of indirect costs and general overhead charges.

MR. GOLDBERG: Is that the end of the answer?

MR. SPARKS: Yes.

MR. GOLDBERG: I now move to strike the answer, Mr. Examiner, because, as I have previously stated, the witness is now engaged in setting forth the basis he used in reaching his results as set forth in the Exhibit 31, and I submit, Mr. Examiner, again that if the exhibit is to be rejected, by the same token, this witness is not entitled to testify on the methods he followed in determining that result.

**TRIAL EXAMINER:** The motion to strike is granted.  
**By MR. SPARKS:**

**Q.** Will you explain the method of applying the Safe Harbor composite labor force?

**MR. GOLDBERG:** The same objection, Mr. Examiner, for the reasons already stated.

**TRIAL EXAMINER:** Objection sustained.

**MR. SPARKS:** May I take an exception to Your Honor's rulings and state at this time that the remainder of the testimony of this witness will relate to the study of the cost of constructing and reproducing the entire physical [752] properties of the Respondents as of December 31, 1945, as embodied in the document marked for identification as Exhibit 31, and ask for Your Honor's ruling as to whether we shall proceed, or whether such testimony is not admissible.

**TRIAL EXAMINER:** What is meant by that part of the heading that embraces "Cost of Constructing"? Cost of constructing as of what time?

**MR. SPARKS:** As of December 31, 1945.

**TRIAL EXAMINER:** So much of the exhibit and so much of the evidence as counsel would submit as relates to reproduction cost will be excluded.

**MR. SPARKS:** Well, if Your Honor please, reproduction cost may have several connotations. We have here an exhibit which has been described as the cost of constructing and reproducing the entire physical properties of these Respondents as of December 31, 1945. I don't know from Your Honor's ruling what you mean by "reproduction cost"—that is, whether your understanding of the term "reproduction cost" applies to this exhibit.

**MR. GOLDBERG:** May I inquire—

**TRIAL EXAMINER (interposing):** The Examiner understands that what you mean by "reproduction cost"

is what is generally known as reproduction cost new in a rate proceeding.

**MR. SPARKS:** I don't know that I mean that, if Your Honor please. This witness has prepared this study and he [753] is prepared to describe it in detail and show what it is. I think that is the only logical way to determine the character of the study.

**TRIAL EXAMINER:** The Examiner will inquire of the witness if this exhibit does not relate to what is generally known as reproduction cost as of some date subsequent to the actual date of construction of the property.

**THE WITNESS:** I might answer that by saying that this is not a hypothetical cost of reproducing the property such as is commonly considered, but it constitutes for the most part a trending of the original dollars of surviving property—the original cost of surviving property—trending those dollars up to December 31, 1945, price levels.

**TRIAL EXAMINER:** It does not relate in any way to what is known in the Federal Power Act as "Actual legitimate original cost"?

**THE WITNESS:** Yes, sir, it is related to that in so far as the company's costs themselves are the actual original cost of the property.

**TRIAL EXAMINER:** Those are your starting figures?  
**THE WITNESS:** Yes, sir.

**TRIAL EXAMINER:** But your cost of constructing and reproducing the entire physical properties of the Pennsylvania Water and Power Company and the Susquehanna Transmission Company of Maryland as of December 31, 1945, except for the [754] starting figures, is not actual; legitimate original cost?

**THE WITNESS:** Except for the starting figures, and I might say that we have eliminated all of the original overheads and indirect charges, and have dealt only with labor

and materials, trending those labor and materials up to the December 31, 1945 price level, but in a few instances where modern construction methods would have reduced the cost considerably, we have used modern construction methods as determined from the cost of the Safe Harbor plant which was built in 1930 or 1931.

MR. GOLDBERG: Mr. Tate, may I ask a question, Mr. Examiner?

TRIAL EXAMINER: Proceed.

MR. GOLDBERG: Has anybody spent the dollars represented by your result?

THE WITNESS: Spent the dollars?

MR. GOLDBERG: Yes, expended them.

THE WITNESS: No one has expended them; no, sir.

MR. GOLDBERG: Obviously, Mr. Examiner, it is not actual cost, and it is only actual cost with which the Commission is concerned. I note that the exhibit contains a column—I think on every page beginning with page 1 and running through page 59—entitled "Actual original Cost of Surviving Property". I assume that that is what it purports to be, and on that assumption, of course, I would not object to [755] that column being received in evidence, because as I understand it, that is no more than the company's claimed actual legitimate cost as presented by Mr. Gunn, but related to surviving property.

TRIAL EXAMINER: Is counsel's statement as to the column headed, "Actual Original Cost of Surviving Property," correct?

MR. SPARKS: As I understood Mr. Goldberg's statement, he said "Actual Legitimate Cost". We have not placed anything in the record characterized as such. Mr. Gunn presented an original cost study.

**TRIAL EXAMINER:** Are all these figures to be found in Exhibit 31 for Identification in the column headed as described by the Examiner, are they all consistent with and to be found in the witness Gunn's exhibit?

**MR. SPARKS:** Let me inquire, Mr. Examiner.

**TRIAL EXAMINER:** Very well.

**MR. SPARKS:** I might say, if Your Honor please, that I am informed by Mr. Gunn that in the study which has been presented he has more than the \$36,414,232 as shown on the first sheet of the tabulations in Exhibit 31.

**MR. GOLDBERG:** He has about \$300,000 more, I think. I suppose that is the overhead. Is that right?

**TRIAL EXAMINER:** Just a minute. If Mr. Gunn is going to testify, he had better testify from the stand.

[756] **MR. GOLDBERG:** Perhaps Mr. Gunn had better tell Mr. Sparks and let Mr. Sparks answer.

The figure of \$36,414,232 appearing on page 1 of Exhibit 31 in the column entitled, "Actual Original Cost of Surviving Property" is the same figure appearing in Exhibit 25, pages 2 and 3 as "Total Electric Plant in Service."

**MR. SPARKS:** That is correct. The difference, if Your Honor please, between the figures shown in Exhibit 31 and the total figures shown on Mr. Gunn's exhibit 25 is made up of, first, an adjustment as shown in line 42 of page 2 of Exhibit 25, and construction work in progress as shown in line 44 of page 3 of Exhibit 25 and Electric Plants Held for Future Use, shown in line 25 of Page 3 of Exhibit 25.

**MR. GOLDBERG:** May I address a question to the witness Tate?

**TRIAL EXAMINER:** Yes.

MR. GOLDBERG: Mr. Tate, is it not a fact that that portion of the title, "Cost of Construction," contained on the title page of Exhibit 31 relates to the column in the exhibit headed, "Actual Original Cost of Surviving Property"?

THE WITNESS: Well, I think it applies to both columns, because the second column is headed, "Trended Construction Cost as of December 31, 1945."

MR. GOLDBERG: You say it applies in the second column because you use the first column as a jumping-off [757] point?

THE WITNESS: We use a part of it. It is put there for comparison. We eliminated the overheads and used only the actual costs of labor and material.

MR. GOLDBERG: And the column has been included for comparative purposes only?

THE WITNESS: That is right.

MR. SPARKS: You are speaking now with respect to Mr. Goldberg's last question of the column headed, "Actual Original Cost of Surviving Property" on page 1 of the tabulation Exhibit 31?

THE WITNESS: Yes, sir.

TRIAL EXAMINER: The Examiner will not receive evidence of trended construction costs as of December 31, 1945.

MR. SPARKS: Well, now, may I ask if Your Honor intends that ruling to apply to Exhibit 31 marked for Identification in whole?

TRIAL EXAMINER: If the exhibit is offered as an entirety, the Examiner will be compelled to exclude it because of the inclusion therein of trended construction costs, but if the actual original cost of surviving property were offered independently, the Examiner would receive it.

MR. SPARKS: Then, to refer to the testimony at this moment, if Your Honor please, may I say that all of the [758] testimony which Mr. Tate would give at this time would relate to Exhibit 31 as a whole.

TRIAL EXAMINER: He will testify to actual original cost of surviving property?

MR. SPARKS: I think if I may put a question to the witness, if Your Honor please?

TRIAL EXAMINER: You may inquire of the witness.

By MR. SPARKS:

Q. What data would you testify to as to the source of the figures shown under the columns headed, "Actual Original Cost of Surviving Property"? A. That those figures were furnished to me by the company.

Q. Furnished you by the company? A. Yes.

TRIAL EXAMINER: That would be the sum and substance, substantially, of your testimony with regard to actual cost?

By MR. SPARKS:

Q. Would that be the same as the testimony with regard to actual original cost? A. We have made some examinations ourselves of some of the items in order to trend the cost, but so far as the figures set forth in this first column are concerned, they were furnished us by the company.

Q. Mr. Tate—

[759] MR. GOLDBERG (interposing): Mr. Sparks, it is a fact that the data is not being offered in support of the company's claim of cost or claim related to original cost; is that so?

MR. SPARKS: That is correct.

MR. GOLDBERG: In that event, the figures in that column, Mr. Examiner, are already in the record in

Exhibit 25, and of course, there is no need to duplicate them.

TRIAL EXAMINER: With that understanding of what the witness' testimony will be, the Examiner will rule that the testimony will not be received in evidence.

MR. SPARKS: That is on the understanding of what we have stated as to what this testimony of the witness will be related to Exhibit No. 31 for Identification?

TRIAL EXAMINER: Yes.

MR. SPARKS: Very well, sir. I desire to make a proffer.

TRIAL EXAMINER: Is this proffer in narrative form?

MR. SPARKS: It is.

TRIAL EXAMINER: Proceed.

MR. SPARKS: I desire to make the following proffer of reproduction costs concerning both Exhibit 31 for Identification and the testimony of the witness:

On behalf of the Pennsylvania Water & Power Company and the Susquehanna Transmission Company of Maryland we offer in evidence Exhibit No. 31 and the testimony of Mr. Thomas R. Tate, Washington representative of the firm of Charles T. Main, [760] Incorporated, in explanation and support of said exhibit. Mr. Tate is a graduate engineer of the University of Missouri with the Degree of Bachelor of Science, Electrical Engineering, 1912. He had several years' experience with operating utilities in various departments before graduation and since graduation has had thirty-four years' experience, four years with operating utilities and twenty years with consulting engineers and engineering and constructing organizations, and ten years of government experience of which 8½ years were with the Federal Power Commission, and 1½ years with the Public Utilities Commission of the Dis-

trict of Columbia. His experience covers the design, construction, operation and valuation of utility properties and industrial plants. He is a fellow in the American Institute of Electrical Engineers, a member of the American Society of Mechanical Engineers, American Society of Civil Engineers and other engineering organizations, and a registered professional engineer of the State of New York. He has given testimony before various utility regulatory commissions, and Federal District Courts. The exhibit is entitled "Cost of Constructing and Reproducing the Entire Physical Properties of the Pennsylvania Water & Power Company and the Susquehanna Transmission Company of Maryland as of December 31, 1945." This exhibit and the testimony in connection therewith establishes the cost of construction and reproduction cost new of the physical [761] property of these companies in the amount of \$62,410,377.

This cost of reproducing the properties of the two companies is not a hypothetical cost of reproduction containing various speculative assumptions. It is, in fact, an adjusted trend to December 31, 1945, price levels of the actual original dollars invested in the surviving property.

The exhibit and testimony are based upon the following premises:

1. That the entire properties would be reproduced identically as they were originally constructed, except some minor items no longer obtainable in which case, the cost of the nearest equivalent modern substitute was used.
2. That substantially the same construction period as was encountered in construction of the Safe Harbor project was used in reproducing the hydroelectric plant, and that the Holtwood Steam Plant would be constructed during a portion of the same period.

3. That similar climatic and river flow conditions prevailed.

4. That the modern construction methods, facilities, and procedure that were actually used in the original construction of Safe Harbor would be repeated in reproducing the Holtwood Hydroelectric plant and similar modern methods would be employed in reproducing the Holtwood Steam Plant.

5. That modern construction methods would also be used [762] in reproducing the transmission lines, substations and other property of these companies.

6. That wages and material prices would remain as they were on December 31, 1945, throughout the entire reproduction period.

7. That sufficient labor would be available to reproduce the properties at the wage rates prevailing as of December 31, 1945:

8. That sufficient materials and equipment would be available at published and quoted prices on December 31, 1945, within prevailing OPA and other governmental regulations.

The adoption of the above premises considerably simplifies the determination of the reproduction cost and makes the total cost conservatively below the probable cost if the properties were to be constructed today; because there have been increases in wage rates and material prices since December 31, 1945.

Exhibit No. 31 and the testimony of Mr. Tate in support thereof are offered for the following purposes:

1. As a basis for determining the extent of the justification for the replacement of property so that the integrity of the original investment of the owners of this property will remain unimpaired.

2. To be used in connection with determining the rate of return approximately applicable to whatever

rate [763] base or bases the Commission may determine, so as to test the propriety and reasonableness of the rate of return and the return and the return allowance by comparison with the returns currently available to other and competitive enterprises of corresponding risk and uncertainty.

3. To be considered and weighed by the Commission in determining the reasonableness of any of the rates, charges or classifications of Respondents as may be subject to the jurisdiction, if any, of the Commission by determining the fair value of the properties of Respondents used and useful in the rendering of the particular services for which such rates, charges and classifications are demanded, observed, charged or collected, and by determining the fair return allowable on such fair value.

Do I understand that Your Honor rules that Exhibit 31 marked for Identification is not admitted in evidence?

TRIAL EXAMINER: May the Examiner see counsel's statement as he has read it?

MR. SPARKS: Yes. Also, I would like to inquire whether Your Honor rules that the testimony in regard to Exhibit 31, whether that is admitted in evidence?

TRIAL EXAMINER: Exhibit 31 for Identification will not be received in evidence. The testimony of the witness as embraced in counsel's proffer of proof will not be [764] received in evidence.

MR. SPARKS: We take an exception, if Your Honor please.

[765] WILFRED McGREGOR HALL,  
was sworn as a witness for and on behalf of the Respondent, and after being examined testified as follows:

DIRECT EXAMINATION.

By MR. SPARKS:

Q. What is your name? A. Wilfred McGregor Hall.

[766] Q. What is your occupation? A. I am an engineer.

Q. Where do you live? A. 1514 Beacon Street, Brookline, Massachusetts.

Q. Where did you receive your education? A. I am a graduate of the University of Colorado, Boulder, Colorado, in 1916. Majored in hydraulic engineering and received a degree B. S. in Civil Engineering.

Q. By whom are you employed? A. I am a director, stockholder and active member of the firm of Charles T. Main, Inc., 201 Devonshire Street, Boston, Massachusetts.

Q. Are you a licensed engineer? A. I am a licensed professional engineer in the State of New York, and the insular possession of Puerto Rico. I have been a senior member of the American Society of Civil Engineers since 1928 and have been listed in "Who is Who" in Engineering since 1937.

Q. How long have you been engaged in practice in engineering? A. 30 years, chiefly in hydroelectric development including dams, power plants, reservoir relocations, construction, preliminary investigations, designs, hydraulic and power studies, cost estimates, large and small projects for 24 years; and consulting engineering, sales [767] engineering, steam plant construction, industrial plant construction, marine construction and military service for the remaining six years. I have been employed in an executive and administrative capacity for the past 24 years.

Q. How much of the time was spent on actual construction? A. 14 years, including work as field and assistant engineer on three projects covering the period of

three years. Engineer in charge or superintendent on six projects covering the period of eleven years.

Q. What is your experience in engineering design?  
A. Seven years, covering various types of permanent structures and construction plants as well as various temporary structures, camps, villages, offices, shops and coffer dams of various types. My designing experience covers preliminary studies, preliminary designs, appraisals and reports on power and industrial plants and projects.

Q. Have you been design and construction manager of large projects? A. Yes. I held that position on three projects covering a period of four years.

Q. Have you conducted preliminary investigations of various projects? A. Yes. I spent approximately three years entirely in this work.

[768] Q. And you have spent some time in consulting, sales and the army? A. Yes, two years.

Q. In connection with all of this work, have you made a great many estimates of the cost of engineering work? A. Yes, over a period of 25 years, I have made estimates for twenty or more large construction projects which were actually constructed and have made sixty or more bids or preliminary estimates on projects of various sizes. I have also made estimates and appraisals for many types of structures chiefly in connection with hydroelectric developments.

Q. What are the nature of projects on which you have gained your construction experience? A. Dams, dykes, coffer dams, canals, revetments, pipe lines, flumes, penstocks, surge tanks, reservoirs, power plants, pumping plants, switch yards, transmission lines and tunnels.

Q. And you have done design estimates and preliminary investigation in connection with all those types of structures? A. Yes, and also in connection with caissons, marine construction, building construction, industrial construction, docks and bridges.

Q. Have you laid out construction plant, designed and specified proper construction equipment for numerous [769]

projects? A. Yes, that has been a part of my experience for some twenty years.

Q. Will you please give us a record of your employment since you have been practicing engineering? A. From May, 1916, to December, 1917, I was employed by Chas. T. Main, Inc., as field and assistant engineer on the Holter hydroelectric project for the Montana Power Company. This was a 70,000 hp installation costing about \$6,000,000 and included 300,000 cubic yard gravity concrete dam.

From January, 1918, to March, 1918, inclusive, I was superintendent of construction for the U. S. Indian Irrigation Service on a small flood control project involving earth and rock jetties, dykes and small dams.

From May, 1918, to December, 1918, I was in the U. S. Army discharged as a Second Lieutenant.

From January, 1919, to January, 1920, inclusive, I was employed by J. A. P. Christfield Contracting Company now United Engineers and Constructors on the Stevenson hydroelectric project of the Connecticut Light and Power Company which involved the installation of a 200,000 cubic [yard] gravity dam, ultimate capacity of 50,000 hp and expenditure of about \$6,000,000.

From February, 1920 to April, 1920, I was resident [770] engineer for Chas. T. Main, Inc., on mill building construction costing about \$300,000 for the Sanford Mills, Fall River, Massachusetts.

From May, 1920, to March, 1921, I was in direct charge of a portion of the field investigation of hydroelectric sites located on tributaries of the Congo River, Africa. I was employed under Mr. W. F. Uhl, member of the firm of Chas. T. Main, Inc., in this investigation for the Union Miniere du Haut Katanga, Elizabethville, Belgian Congo, Africa, for the proposed construction of high concrete dams and large power installations.

From April, 1921, to August, 1922, inclusive, I was employed by Chas. T. Main, Inc., in connection with the design

and completion [of] plans for several projects in the Belgian Congo, Africa, and several minor hydroelectric projects.

From September, 1922, to April, 1924, I was employed by the U. G. I. Contracting Company, now United Engineers and Constructors, on preliminary investigation of hydroelectric developments for the Connecticut Light and Power Company and the Gloversville New York Utility Company and during this period in 1923, I worked on special designs and construction for a steam power plant.

From May, 1924, to November, 1925, I was in engineering charge and later construction superintendent for the [771] U. G. I. Contracting Company on the Soft Maple hydroelectric project of the Northern New York Utilities, Inc. This project involved a 30,000 hp installation and cost approximately \$3,500,000.

From December, 1925 through June, 1926 I was in charge of field investigation on the Housatonic River for the Connecticut Light and Power Company. These were preliminary investigations involving large concrete earth dam projects and power plants.

From July, 1926, to July, 1928, I was employed by the U. G. I. Contracting Company on the Rocky River hydroelectric project of the Connecticut Light and Power Company. The project involved the construction of earth dams, dykes, canals, generating station and pumping plant. I was in charge of engineering and general superintendent of the project, and in 1928 was also district construction manager. My duties not only included the complete hydroelectric project, but also supervision of construction of various substations and transmission line installation.

From August, 1928 to December, 1928, I was in charge of construction on a harbor pipe line installation for the New Haven Gas Company, involving the construction of 6,000 lineal feet in tide water, 40 feet deep.

From January, 1929 to June, 1931 I was superintendent [772] of construction in charge of engineering and construc-

tion on the Jerry O'Connell, Banaeiras, Brazil, hydroelectric project owned by the Compania Electrica de Bahia. I was employed by the Electric Bond and Share Company and the project involved the construction of a hollow, multiple arch concrete dam about one-third of a mile long. The entire project cost approximately \$6,000,000.

From July, 1931 to June, 1932, I was engaged in the sale of used construction equipment and steel sheet piling in New York City.

From July, 1932 to October, 1932 I was located in New York City engaged in the practice of consulting engineer.

From 1933 to April, 1937, I was construction engineer in charge of construction on the Wheeler Dam and power plant project of the Tennessee Valley Authority. The ultimate cost of this project was approximately \$45,000,000.

From July, 1937 to July, 1941, I was employed as manager of construction and design on several projects for the Insular Government of Puerto Rico, costing about \$13,000,000. The projects involved the construction of 3 power plants for an installed capacity of 50,000 kva and included 500,000 cubic yards of concrete, 2,000,000 cubic yards of earth excavation and fill, 1,000,000 cubic yards of rock excavation, 3 tunnels, totaling 3 miles in length, 10 miles of concrete and steel pipe, electrical substation [773] and transmission lines.

From August, 1941 to date, I have been with the firm of Chas. T. Main, Inc. I have been an active member of the firm and a stockholder since October, 1942 and a director since January, 1943. My duties are those of a consultant and executive in connection with designs, construction and appraisals of hydroelectric water supply, water treatment and industrial projects.

Hydroelectric power plant designs totaling 1,200,000 kw in six projects for the U. S. Army Engineers—including Wolf Creek—300,000 kw, Dale Hollow—60,000 kw, Center Hill—150,000 kw and Table Rock—140,000 kw. Also during

this period, I have made appraisals of hydroelectric project with a total capacity of 250,000 kw.

Q. Mr. Hall, have you been engaged in making certain studies and estimates related to the properties of the Pennsylvania Water and Power Company and the Susquehanna Transmission Company of Maryland? A. I have.

Q. Would you please explain the nature of these studies and estimates? A. My work has consisted mainly of making estimates of the cost of a substitute plant.

Q. Just what do you mean by substitute plant? A. In our studies of the Pennsylvania Water & Power [774] Company and the Susquehanna Transmission Company of Maryland properties, consideration was given to the fact that changes in the art had taken place since some of these properties were originally constructed and estimates were made of the cost as of December 31, 1945 of building modern plants to take the place of those presently in use.

Q. Did these estimates cover all of the properties of these companies? A. No, the items covered by the substitute plant estimates were, first, the Holtwood Hydro Plant with the exception of three items, namely land and land rights, the operators' village and roads, railroads and bridges; second, the Holtwood Steam Plant excluding the river coal plant and third, that portion of the two companies' transmission plant represented by the Holtwood Substation, the 66 KV Transmission lines between Holtwood and the Highlandtown Substation and the Highlandtown substation itself, excluding only such land and land rights as are associated with them.

Q. And how were these estimates related to the study which has been marked for identification Exhibit 31? A. I have prepared a summary and an outline of the procedure followed in estimating the substitute plant and the manner of combining these estimates with costs shown in the study marked for identification as Exhibit 31 to determine the cost as of December 31, 1945 of rebuilding [775] all of the properties of these two companies.

**MR. SPARKS:** Mr. Examiner, I have a document entitled "Pennsylvania Water & Power Company and the Susquehanna Transmission Company of Maryland, outline of Estimating Procedure, substitute and reproduction plant costs as of December 31, 1945," which I ask to be marked for identification as Exhibit 32.

**TRIAL EXAMINER:** The document may be marked Exhibit 32 for Identification.

(Document marked for identification Exhibit No. 32.)

**By MR. SPARKS:**

Q. Mr. Hall, do you have before you the document to which I have just referred, which has been marked for identification as Exhibit 32? A. I do not.

Q. I will now hand it to you. Do you now have it? A. I now have it.

Q. As I understand it, the first pages in the exhibit marked for identification as Exhibit 32 contain a description of your procedure in arriving at the summary shown on pages 12, 13 and 14 and the remaining pages show certain supporting data. Is that correct? A. Yes, sir.

Q. Now, please, what do the various columns in the summary sheets 12, 13 and 14 of the exhibit marked for [776] identification as Exhibit 32 show?

**MR. GOLDBORG:** Mr. Examiner, may we have a statement from counsel as to the purpose of Exhibit 32 for Identification, and the testimony?

**MR. SPARKS:** The purposes, I will state, briefly, at this time are related to the rate of return study, and to contentions that may be made by the company for rate base and to our depreciation studies.

**TRIAL EXAMINER:** The relationship with respect to these studies set forth is on the basis on substitute plant based on the trended cost?

MR. SPARKS: Page 12 of the exhibit—

TRIAL EXAMINER: (Interposing.) Based on what theory of cost?

MR. SPARKS: I think that if Your Honor would not mind having the witness answer that, he could do it better than I. <sup>o</sup>

[777] THE WITNESS: Based upon the substitute plant as a plant of modern design as described here in the exhibit.

TRIAL EXAMINER: Using what?

THE WITNESS: Using a plant of modern design, practice and construction costs as of December 31, 1945.

TRIAL EXAMINER: Construction costs as of December 31, 1945?

THE WITNESS: Yes. That applies to a large portion of the features of the plant. Other features are presumed to be the same as the original, and in some cases, such as the matter of railroad relocation where items are turned over to these other parties at the time of reconstruction.

MR. GOLDBERG: Mr. Examiner, is this witness being offered to testify as to the alleged actual depreciation of the properties of the Susquehanna Transmission Company of Maryland and the Pennsylvania Water & Power Company?

MR. SPARKS: He is not.

MR. GOLDBERG: What is the pending question?

(The pending question was read.)

MR. GOLDBERG: Mr. Examiner, for the reasons already stated in connection with Exhibits 30 and 31, I object to the question.

TRIAL EXAMINER: Objection overruled.

THE WITNESS: The first column shows the trended cost statement which has already been described. The second

[778] column represents the trended costs of the original plant items which are substitute plant the estimate is to replace. The third column shows that portion of the trended cost statement which represents property of modern design and for which no substitution would be made today that would differ materially in design, performance or cost.

The fourth column is a summary of the substitute plant estimate.

The fifth column is the sum of columns 3 and 4. This sum shown in Column 5 represents the cost at December 31, 1945, of rebuilding all of the properties of these two companies in accordance with modern design and practice.

The figures shown for land and land rights, Account 340 in Columns 1, 3, 4 and 5 were obtained from the company.

By MR. SPARKS:

Q. What is the total cost of rebuilding all of this property as of December 31, 1945?

MR. GOLDBERG: Objection, Mr. Examiner, for the reasons already stated.

TRIAL EXAMINER: The objection is sustained.

MR. SPARKS: May I say at this point, if your Honor please, that all of the rest of the testimony which we would offer through Mr. Hall will relate to the exhibit marked for identification No. 32. Is it the Examiner's ruling that that testimony will not be or is not admissible in evidence?

[779] TRIAL EXAMINER: It is.

MR. SPARKS: I take an exception. We desire to make an offer at this time, if your Honor please, of the testimony which would be tendered in the record by Mr. Hall, of Exhibit 32.

On behalf of the Pennsylvania Water & Power Company and the Susquehanna Transmission Company of Maryland, we offer in evidence Exhibit No. 32 and the testimony of Mr. W. M. Hall, member of the firm of Chas. T. Main, Inc., in explanation and support of said exhibit. Mr. Hall, an active member of the firm of Chas. T. Main, Inc., is a graduate of the University of Colorado, a member of the American Society of Civil Engineers and a licensed professional engineer of the State of New York. His engineering experience covers a period of 30 years during which time he has been active in design, supervision and construction of power plants both steam and hydro as well as having had a vast experience in other engineering fields. The exhibit is entitled "Substitute and Reproduction Plant Costs as of December 31, 1945." This Exhibit 32 and the testimony in connection therewith establishes the cost of a modern substitute plant in the amount of \$55,394,792. This study shows the cost of a modern substitute plant at the same location, of the same capacity and capable of performing the same functions as property of present companies now perform. It is based upon the following premises:

[780] 1. That a modern new hydroelectric plant would be substituted for the Holtwood hydroelectric plant and located at the same site.

2. That a modern new steam-electric power station and coal preparation plant would be substituted for the present Holtwood steam station and coal preparation plant and located at the same site.

3. That the two 25 cycle transmission lines running from Holtwood Substation to the Highlandtown Substation in Baltimore would be replaced with a modern transmission line of higher voltage and located along the same right of way but with a 50 foot wider right of way wherever required.